



U.S. Department
of Transportation

**National Highway
Traffic Safety
Administration**

400 Seventh Street, S.W.
Washington, D.C. 20590

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*** *** ***



AUTO SAFETY HOTLINE
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FRANKLIN RESEARCH CENTER

Division of Arvin/Calspan
[REDACTED] New York 14225

FRC ON-SITE AIR BAG DEPLOYMENT INVESTIGATION

CASE NO. 90-7

FLEET - 1990 ACURA LEGEND

LOCATION - [REDACTED], NY

ACCIDENT DATE - [REDACTED], 1990

Contract No. DTNH22-87-C-07169

Prepared for:

U.S. Department of Transportation
National Highway Traffic Safety Administration
Washington, D.C. 20590

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TECHNICAL REPORT STANDARD TITLE PAGE

1. Report No. FRC Case No. 90-7		2. Government Accession No.		3. Recipient's Catalog No.	
4. Title and Subtitle FRC On-Site Air Bag Deployment Investigation Fleet - 1990 Acura Legend LS Location - ████████, NY				5. Report Date ██████ 1990	
				6. Performing Organization Code	
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15. Supplementary Notes On-site investigation of an air bag deployment crash that involved a 1990 Acura Legend LS.					
16. Abstract <p>This report focuses on a 1990 Acura Legend that was involved in a front to side impact sequence with a tractor-trailer unit. The Acura impacted the left rear tires of the trailer unit that resulted in a 1 o'clock impact force. The frontal area of the vehicle was torn down at the time of FRC's inspection; however, a crush profile was estimated from the damaged parts. The damage mode of the CRASHPC program computed a velocity change of 13.4 mph using the movable barrier category for the struck trailer unit. The longitudinal component of the vehicle's deceleration was sufficient to deploy the Acura's driver air bag system.</p> <p>The belted 40 year old male driver sustained a sprain of his right thumb, a contusion of the dorsal aspect of his left forearm, and lower back pain from the impact sequence.</p>					
17. Key Words Acura Legend Left frontal impact Air bag deployment			18. Distribution Statement General Public		
19. Security Classif. (of this report) Unclassified		20. Security Classif. (of this page) Unclassified		21. No. of Pages 57	
				22. Price	

TABLE OF CONTENTS

	<u>Page No.</u>
Summary	1
Accident Schematic	2
Accident Data	3
Ambience	3
Highway	3
Traffic Controls	4
Vehicles	4
Vehicle Damage	5
Vehicle Velocity Estimates	6
Collision Sequence	7
Air Bag System	8
Human Factors/Occupant Data	8
Air Bag Driver Injuries	9
Air Bag Driver Kinematics	9
Selected Prints	10
Slide Index	14
Appendix A: Police Accident Report	15
Appendix B: CRASHPC Output	18
Appendix C: Air Bag Supplement	21
Appendix D: NASS Vehicle Forms	28
Appendix E: NASS Occupant Forms	50

FRANKLIN ON-SITE AIR BAG DEPLOYMENT INVESTIGATION

FRC CASE NO. 90-7

FLEET - 1990 ACURA LEGEND
LOCATION - ████████, NY

SUMMARY

This crash occurred on a four-lane state route at its junction with a driveway that serviced a shopping plaza on ████████, 1990, at 2231 hours. A 1990 Acura Legend LS, 2 dr. coupe, was traveling in a southerly direction on the state route at a driver estimated speed of 40-45 mph. Vehicle #2, a 1982 Peterbilt tractor with a flatbed trailer exited the driveway and initiated a left turn as it crossed the Acura's path of travel. The driver of the Acura braked in an attempt to avoid impact. The vehicle was equipped with anti-lock brakes and therefore the tires of the Acura did not lock.

The left frontal area of the Acura impacted the left rear tires of the trailer unit resulting in a 1 o'clock impact force to the Acura (CDC - 01-FYEW-2). The vehicle was torn down at the time of FRC's inspection; however, a crush profile was estimated from the damaged parts that yielded a velocity change of 13.4 mph with a longitudinal component of -12.6 mph. The impact induced deceleration was sufficient to deploy the driver air bag system.

The driver of the Acura was a 40-year-old male, 71", 175 lbs. He was wearing the active 3-point lap and shoulder belt system. At impact, he was in a normal seated position with both hands bracing against the steering wheel. He responded to the 1 o'clock impact force by moving forward and slightly to his right. The driver's left knee impacted the outside rearview mirror switch that was located on the mid instrument panel. The contact displaced the switch but did not cause injury. He loaded the steering wheel with his hands as he attempted to brace. His loading force resulted in a sprain (AIS-1) of his right thumb. The driver's left hand separated from the steering wheel and impacted (scuffed) the upper instrument panel. The left hand contact did not result in injury. His left forearm subsequently impacted the left upper A-pillar that resulted in a contusion (AIS-1) of the dorsal aspect of his left upper forearm. The driver loaded the active belt webbing and the deployed air bag which prevented him from additional interior contact. The restraint loading and impact force aggravated a chronic back pain (not a codeable injury).

The Acura came to rest against the struck trailer. The driver of the Acura noted a foul odor as he exited the vehicle that he associated with air bag deployment. He refused medical attention and was transported to his residence following the crash. The Acura sustained disabling damage and was towed from the scene.

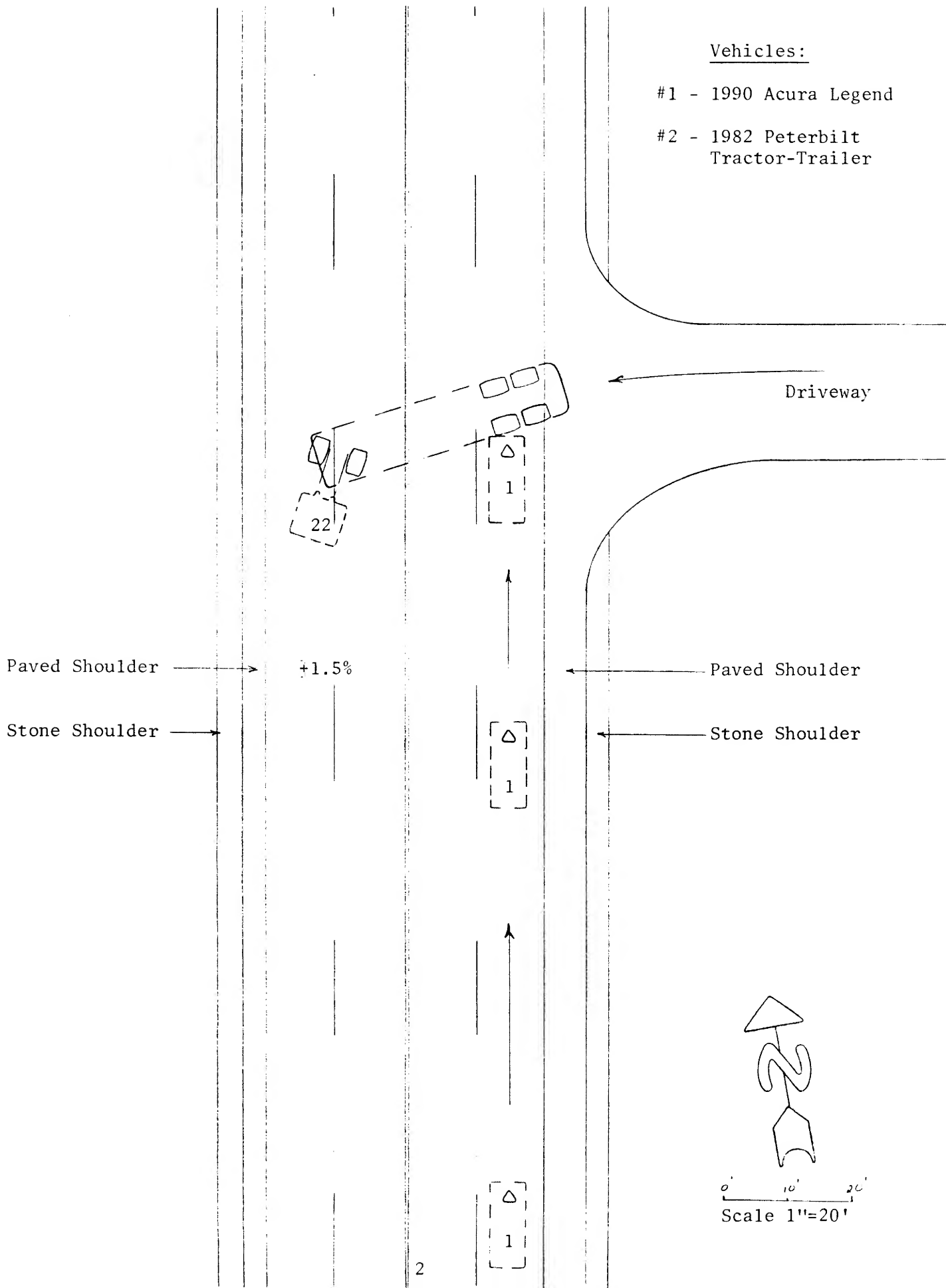
Accident Schematic

FRC Case No. 90-07

Vehicles:

#1 - 1990 Acura Legend

#2 - 1982 Peterbilt
Tractor-Trailer



FRANKLIN ON-SITE AIR BAG DEPLOYMENT INVESTIGATION

FRC CASE NO. 90-7

FLEET - ACURA LEGEND
LOCATION - [REDACTED], NY

ACCIDENT DATA

Location: State route at a shopping plaza driveway
City/Township: [REDACTED] NY
Area/Type: Urban/Commercial
Accident Date/Time: [REDACTED], 1990, 2231 hours
Investigating Police Agency: Town of [REDACTED] Police
Accident Type: Car/Tractor-trailer, front to side impact configuration
Air Bag Vehicle Occupant Injury Severity: Minor (AIS-1)

AMBIENCE

Viewing Conditions: Dark, lighted
Weather: Clear
Precipitation: None
Road Surface: Dry

HIGHWAY

Type: State route
Number of Lanes: 4
Width: 43'
Surface: Asphalt
Median: None
Edge: East edge - 5'5" paved shoulder
West edge - 6'8" paved shoulder

HIGHWAY (CONT'D.)

Vertical Alignment:	1.5% grade, positive to the south
Horizontal Alignment:	Straight
Estimated Coefficient of Friction:	.65
Traffic Density:	Light

TRAFFIC CONTROLS

Signals:	None
Signs:	None pertinent
Markings:	Solid yellow full barrier center lines, solid white edge line, broken white lane lines
Speed Limit:	45 mph

VEHICLES

	<u>Air Bag Vehicle</u>	<u>Vehicle #2</u>
Description:	1990 Acura Legend LS, 2 dr. coupe	1982 Peterbilt tractor-trailer combination
V.I.N.:	JH4KA327XLC (production number deleted)	
Color:	Dark green	
Odometer:	6,992 miles	
Engine:	V-6, 2.7 liter	
Transmission:	4-speed automatic, console mounted transmission selector lever	
Steering:	Power assisted rack-and-pinion	
Brakes:	Power assisted 4-wheel disc with antilock	
Padding:	Upper, mid, and lower instru- ment panel, soft-edged steering wheel rim and air bag module cover, sunvisors, door panels, door armrests, center console, adjustable head restraints	

VEHICLES (CONT'D.)

	<u>Air Bag Vehicle</u>	<u>Vehicle #2</u>
Active Restraints:	3-point lap and shoulder belt systems in the four outboard seating positions, center rear lap belt	
Passive Restraints:	Driver air bag system that deployed as a result of the frontal impact sequence with vehicle #2	
Defects:	None	
Tow Status:	Towed due to damage	Not required, driven from scene

VEHICLE DAMAGE

	<u>Air Bag Vehicle</u>	<u>Vehicle #2</u>
Exterior:	<p>The 1990 Acura Legend sustained moderate damage from its impact with the left forward axle tires of the trailer unit of vehicle #2. The damaged frontal components were removed from the vehicle prior to our inspection; therefore, the following damage data was obtained from those components. Direct contact damage began 8" left of center and extended 21" to the left corner of the vehicle. The left frame rail was displaced rearward approximately 5.25". The impact force displaced the unibody components rearward, downward, and laterally to the right. A crush profile was estimated at bumper level and was as follows: $C_1=9.5"$, $C_2=13.0"$, $C_3=7.25"$, $C_4=4.5"$, $C_5=2.25"$, $C_6=0.0"$.</p> <p>Damaged components included the front bumper, grille area, left headlight assembly, hood, radiator support panel, left front fender, and the structural components of the unibody system. The sunroof (fixed unit) glass was cracked at the left upper corner from the vehicle's absorption of the impact forces.</p>	<p>The driver of the Acura stated that the impact dented the left rear wheel (split rim) of the trailer unit. The dent was minor and did not require changing of the tire and wheel assembly.</p>

VEHICLE DAMAGE (CONT'D.)

	<u>Air Bag Vehicle</u>	<u>Vehicle #2</u>
CDC:	01-FYEW-2	10-LTWW-A
Repair Cost:	\$10-11,000 (preliminary estimate)	\$100.00 (estimated)
Interior (Air Bag Vehicle):	<p>The interior of the Acura Legend sustained minor damage that resulted from air bag deployment and occupant contact. The module cover separated at the designated tear points as the system deployed.</p> <p>The driver's left knee impacted the mid instrument panel which displaced the outside rear view mirror switch from the mid panel. His left hand impacted and scuffed the upper instrument panel 17.5" left of center. The driver loaded the deployed air bag and the active belt webbing; however, these components were not damaged and did not show evidence of contact.</p>	

VEHICLE VELOCITY ESTIMATES

	<u>Air Bag Vehicle</u>
Travel Speed:	40-45 mph (driver estimates)
Impact Speed:	12-15 mph
Total ΔV :	13.4 mph
Longitudinal ΔV :	-12.6 mph
Lateral ΔV :	- 4.6 mph

The ΔV s were computed by the damage mode of the CRASHPC program using an estimated crush profile for the Acura. Vehicle #2 was entered into the program as a movable barrier.

COLLISION SEQUENCE

- Pre-Crash: The air bag equipped Acura Legend was traveling in a southerly direction on the outboard travel lane at a driver estimated speed of 40-45 mph. Vehicle #2 was stopped in the driveway of a shopping plaza waiting for traffic to clear before initiating a left turn onto the state route. The driver of vehicle #2 apparently failed to detect the air bag vehicle as he accelerated and turned across the Acura's path of travel. The driver of the Acura braked in an attempt to avoid impact; however, he did not have sufficient distance to stop his vehicle.
- Crash: The left frontal area of the Acura Legend impacted the left front wheels of the trailer unit resulting in a 1 o'clock impact force to the Acura. Although the vehicle was torn apart at the time of our inspection, an estimated crush profile yielded a velocity change of 13.4 mph using the damage algorithm of the CRASHPC program. The longitudinal component (-12.6 mph) of the vehicle's velocity change was of sufficient magnitude to deploy the vehicle's driver air bag system.
- The driver of the truck braked at or immediately following the impact sequence and stopped his vehicle near the point of impact. The air bag vehicle was rotated slightly in a counterclockwise direction by the forward velocity of the truck before coming to rest against the struck trailer.
- Post-Crash:
- Final Rest - At rest, the Acura was facing in a southerly direction in the outboard travel lane. Vehicle #2 came to rest diagonal to the roadway blocking all four travel lanes.
- Driver Activities - Both drivers exited their respective vehicles immediately following the crash.
- Police Activities - The investigating police officer was stopped behind vehicle #2 and witnessed the crash. He charged the driver of the tractor-trailer with failure to yield to the right of way.
- Rescue Activities - A volunteer fire company responded to the accident scene. Their services were not required; however, one of the firemen transported the driver of the Acura to his residence.
- Scene Clearance - The Acura sustained disabling damage and was towed from the scene. The tractor-trailer unit sustained extremely minor damage and was driven from the scene.

AIR BAG SYSTEM

The Acura Legend was equipped with a driver air bag system that deployed at impact. The air bag measured approximately 24" in diameter (deflated state) and was not equipped with an internal tether. The bag was vented through two ports that were 1.25" in diameter located on the inboard edge of the bag (near the inflator) at the 5 and 7 o'clock positions. There was no generant residue deposits in the vicinity of the venting ports. The driver stated that he noted a foul odor within the vehicle immediately following the crash; however, he did not notice smoke or dust within the vehicle.

The air bag was labeled as follows:

[REDACTED]
MODEL NO.

[REDACTED]
MFG. DATE
[REDACTED]

HUMAN FACTORS/OCCUPANT DATA

	<u>Air Bag Vehicle</u>	<u>Vehicle #2</u>
Driver:	40 year old male	59 year old male
Height:	71"	
Weight:	175 lbs.	
Occupation:	Veterinarian	Truck driver
Active Restraint System Usage:	3-point lap and shoulder belt	Lap belt
Usage Source:	Police report, driver interview, vehicle inspection	
Eyeglasses:	Prescription eyeglasses, not damaged, came off driver's face during impact sequence	
Vehicle Familiarity:	4 months	
Route Familiarity:	Travels route several times per week	
Trip Plan:	Returning to residence	
Manner of Leaving Scene:	Volunteer fire vehicle to residence	Drove involved vehicle
Type of Medical Treatment:	None	None

DRIVER INJURIES (AIR BAG VEHICLE)

<u>Injury</u>	<u>Severity (OIC/AIS)</u>	<u>Source</u>
Sprain of the right thumb	Minor (QRSJ-1)	Steering wheel rim
Contusion of the upper third of the dorsal aspect of the left forearm	Minor (RLCI-1)	Left upper A-pillar
Aggravated a chronic back pain	N/A (0000-0)	Restraint loading/ impact force

DRIVER KINEMATICS

The driver of the air bag vehicle was in a normal seated position at impact with both hands firmly bracing against the steering wheel rim. He stated that he was wearing the active 3-point lap and shoulder belt system. The latchplate showed evidence of routine usage (scratch marks); however, the belt webbing did not display evidence of occupant loading (stretching or transfers). At impact, the driver moved forward and slightly to his right in response to the 1 o'clock impact force. He initially loaded the steering wheel rim with his hands as he attempted to brace himself. His loading force resulted in a sprain of his right thumb. The driver's left hand separated from the steering wheel rim and impacted the upper instrument panel. Although no injury occurred, a scuff mark evidenced the contact point that was located 17.5" left of center. His left forearm subsequently impacted the left upper A-pillar that resulted in a contusion of the upper third of the dorsal aspect of the forearm. No contact evidence was visible on the A-pillar covering.

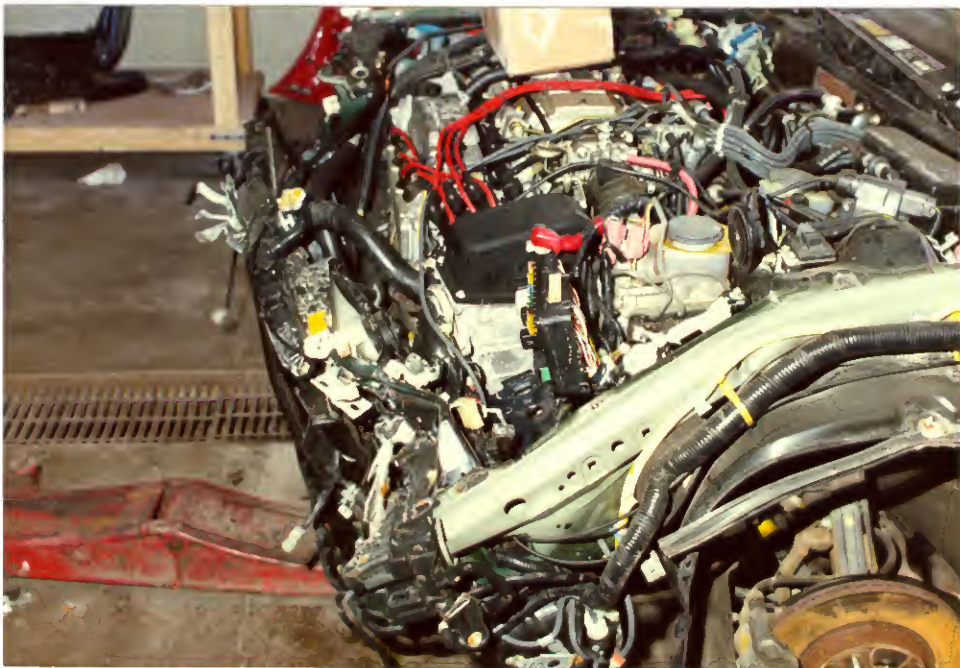
The driver loaded the active belt webbing with his torso which probably induced a slight downward trajectory to his head. His facial area loaded the deployed air bag which prevented him from contact with the steering wheel rim. No injury occurred from his involvement with the air bag. The driver's left knee impacted the mid instrument panel area which displaced the outside mirror adjustment switch from the instrument panel. Again, no injury resulted from this contact point.

The restraint loading and impact force aggravated a chronic lower back pain that the driver has had in the past. He rebounded into the left front seatback where he came to rest.

SELECTED PRINTS



Left Front Three-Quarter View Of The Acura.



Perpendicular View Of The Frontal Structure.



Front Bumper Crush.



Hood Face Crush.



Deployed Air Bag And Driver Contact Points.



Air Bag Venting Ports.



Driver's Left Knee Contact To The Mirror Switch.



SRS And ALB Warning Labels Affixed To The Vehicle's Hood.

SLIDE INDEX

<u>Slide No(s).</u>	<u>Description</u>
1-4	Trajectory of the air bag vehicle
5	Lookback view of the vehicle's trajectory
6	Frontal view of the Acura
7	Closeup view of the left frontal damage
8	Left front three-quarter view
9	Perpendicular view showing the extent of crush
10	Front bumper damage
11	Hood damage
12	Vehicle identification stickers on left B-pillar
13	Overall interior view from the left front door
14	Driver's seated position and the deployed air bag
15	Deployed air bag
16	Air bag identification numbers
17	Air bag venting ports
18	Driver's left hand contact to the upper instrument panel
19	Left knee contact to the mirror switch
20	SRS warning label
21	Knee bolster area
22	SRS warning label on steering column
23	View across the interior from the left door area
24	Driver's seat and 3-point restraint system























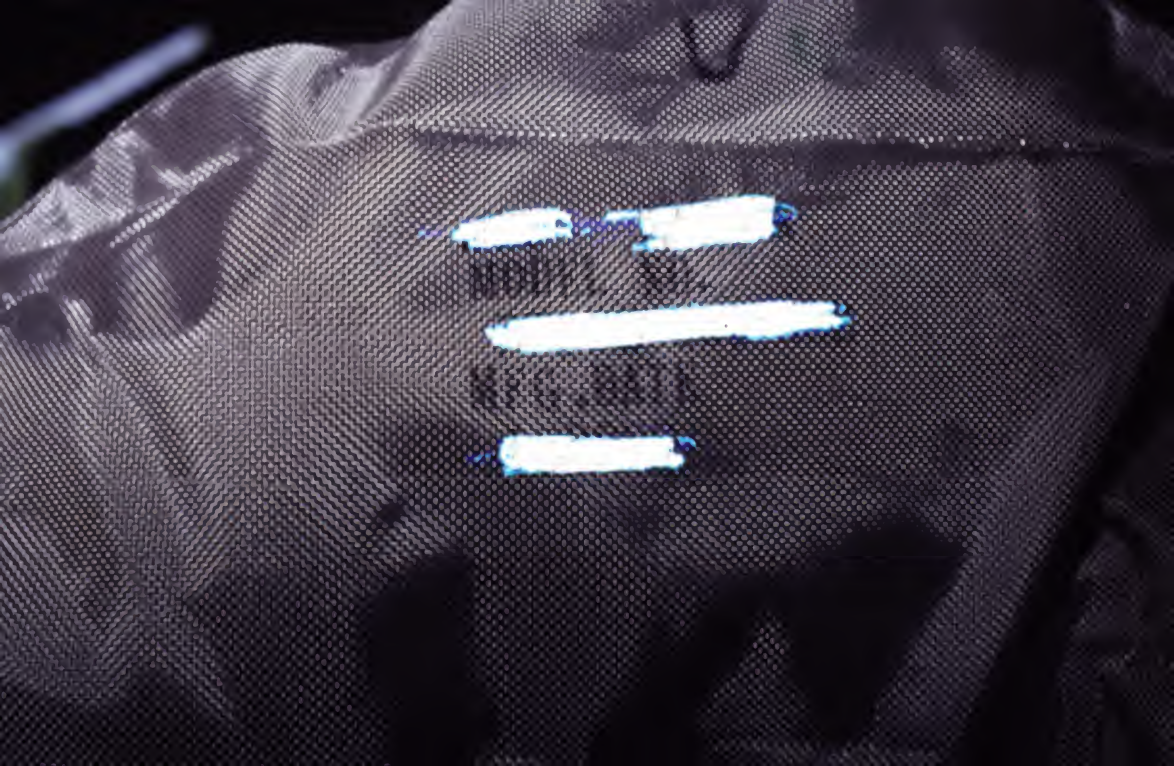
MADE IN JAPAN BY HONDA MOTOR CO., LTD. 8/ 89
GVWR 2210LBS GAWR F 2380LBS R 1850LBS
THIS VEHICLE CONFORMS TO ALL APPLICABLE
FEDERAL MOTOR VEHICLE SAFETY, BUMPER,
AND THEFT PREVENTION STANDARDS IN EFFECT
ON THE DATE OF MANUFACTURE SHOWN ABOVE:

















THESE INSTRUCTIONS ARE FOR THE
OWNER'S USE ONLY. THEY ARE NOT
TO BE USED BY ANY OTHER PERSON
& DRIVER. ALWAYS READ THE
INSTRUCTIONS CAREFULLY BEFORE
OPERATING THE EQUIPMENT.
THESE INSTRUCTIONS ARE FOR THE
OWNER'S USE ONLY. THEY ARE NOT
TO BE USED BY ANY OTHER PERSON
& DRIVER. ALWAYS READ THE
INSTRUCTIONS CAREFULLY BEFORE
OPERATING THE EQUIPMENT.



SRS

ALWAYS WEAR YOUR SEAT BELT
THIS CAR IS EQUIPPED WITH
A DRIVER AIRBAG AS A SUPPLEMENTAL
RESTRAINT SYSTEM (SRS).
IT IS DESIGNED TO SUPPLEMENT THE
SEAT BELT.

MIRROR

SECURITY





CAUTION

SRS

TO AVOID DAMAGING THE
SRS CABLE OR REEL, WHICH
COULD MAKE THE SYSTEM
INOPERATIVE, REMOVE THE
STEERING WHEEL BEFORE
REMOVING THE STEERING
SHAFT CONNECTION BOLT.

ATTENTION

SRS





APPENDIX A

Police Accident Report

POLICE ACCIDENT REPORT

BEST AVAILABLE COPY

DMV COPY

Page 1 of 1 Pages		Local Codes		19. 60																																					
Accident Date 10/90		Day of Week		Time 1031 AM		No. of Vehicles 2		No. Injured 1		No. Killed 0		Non-Highway		Not Investigated at Scene		Left Scene		Police Photos Yes No		20. -																					
VEHICLE 1										VEHICLE 2										BICYCLIST										PEDESTRIAN										21. 7	
Name - exactly as printed on license										DMV USE		Name - exactly as printed on license										DMV USE		22. -																	
Number and Street												Number and Street												23. 5																	
City State Zip Code												City State Zip Code												24. 1																	
Date of Birth 10/50 Sex M Un-Licensed No. of Occup. Public Property Damaged State of License NY												Date of Birth 10/31 Sex M Un-Licensed No. of Occup. Public Property Damaged State of License OHIO												25. 1																	
Name - exactly as printed on registration										Date of Birth 10/50		Name - exactly as printed on registration										Date of Birth 10/31		26. 3																	
Number and Street										Hazardous Material Code		Number and Street										Hazardous Material Code		27. 1																	
City State Zip Code												City State Zip Code												28. 1																	
Plate Number State of Reg. Yr. & Vehicle Make Vehicle Type Ins. Code												Plate Number State of Reg. Yr. & Vehicle Make Vehicle Type Ins. Code												29. -																	
90 ACUR 2DSD												82 PET TRACTOR												30. -																	
Check if involved vehicle is more than 95" wide, more than 34' long.										ACCIDENT DIAGRAM										Check if involved vehicle is more than 95" wide, more than 34' long.										31. -											
VEHICLE 1 DAMAGE										VEHICLE 2 DAMAGE										32. 1																					
																				33. 3																					
No Damage Undercarriage										No Damage Undercarriage										34. 1																					
Vehicle Towed By										Vehicle Towed By No Tow										35. -																					
Reference Marker										DMV USE ONLY										County City Town Village										36. 1											
5 3 0 1																				Route No. and Street Name on RD. (Route)										37. -											
Ticket/Arrest Other										Ticket/Arrest Number(s)										Violation Section(s)										38. -											
Opr 1 Pedestrian Opr 2 Bicyclist										1143 V+T LAW										Nearest Intersecting Route/Street										39. -											
Accident Description/Officer's Notes										VEHICLE #1 SOUTH BOUND ON RD. IN RIGHT LANE										VEHICLE #2 PULLING OUT OF DEPT. ROAD, NY. SOUTH DRIVEWAY MAKING LEFT TURN TO GO NORTH ON RD. VEHICLE #2 PULLED ACROSS PATH OF VEHICLE #1, VEHICLE #1 BRAKE TO AVOID A/A BUT STRUCK SECOND SET OF DUAL WHEELS ON TRAILER (FROM REAR BUMPER) ON LEFT SIDE.										40. -											
ACCIDENT WITNESSED BY REPORTING OFFICER WHICH WAS BEHIND VEH. #2 WAITING TO PULL OUT OF PARKING LOT ALSO.																														41. -											
8 9 10 11 12 13 14 15 16 17 18										Names - If Deceased, Give Date of Death										42. -																					
1 1 4 1 40 M 11 12 6 9997																				43. -																					
2 1 2 1 59 M - - 6 -																				44. -																					
SIGN										Officer's Rank and Name										Badge No. Department Precinct/Post Troop/Zone Station/Beat/Sector Reviewing Officer Date/Time Reviewed										45. -											



STATE OF NEW YORK POLICE ACCIDENT REPORT COVER SHEET
(To be used with MV-104A and MV-104AN). Place this sheet over the front of the accident report so that the numbered arrows line up with the boxes of the same number along the edges of the report. This will explain the meaning of the numbers written in the boxes.

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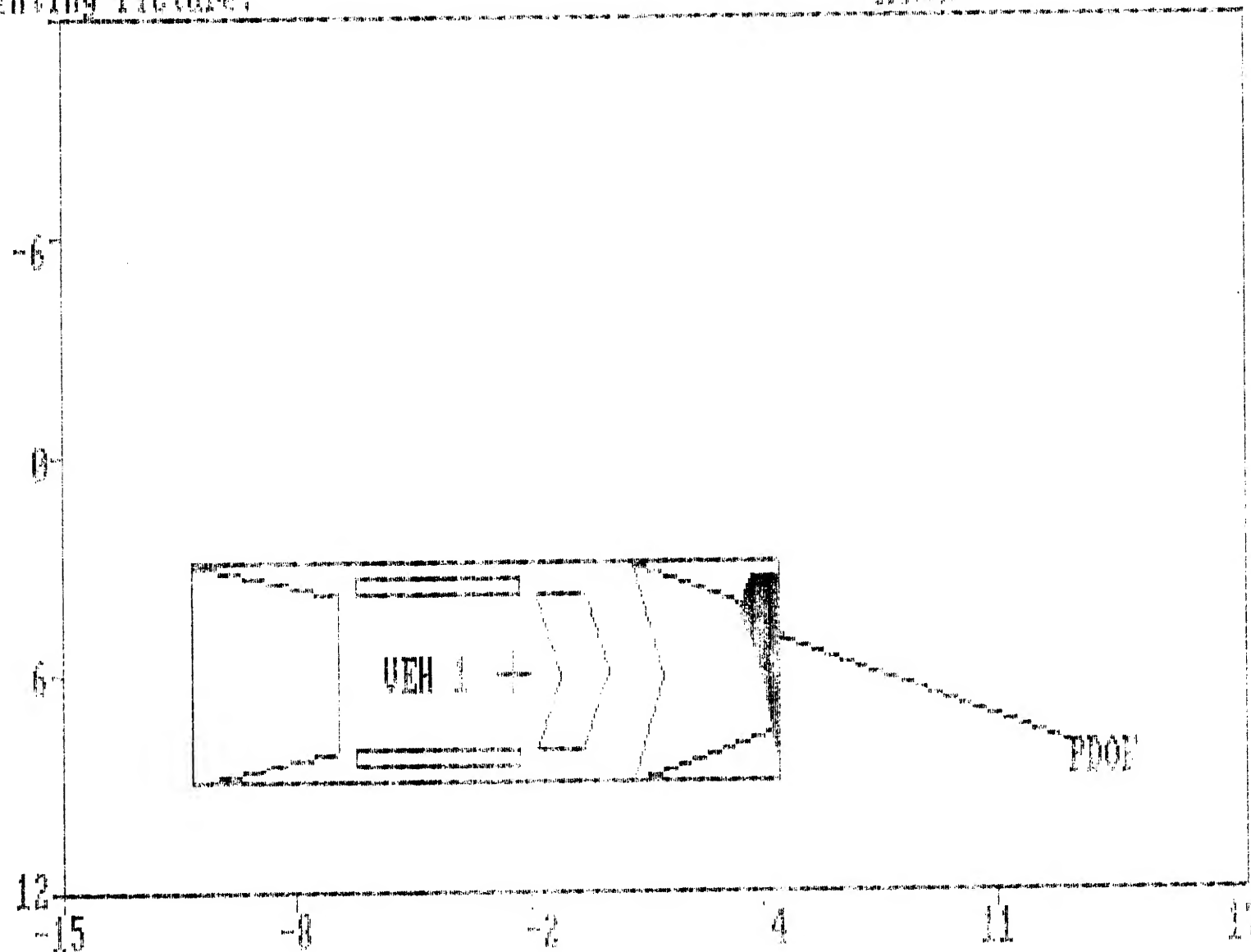
PEDESTRIAN/BICYCLIST LOCATION		APPARENT CONTRIBUTING FACTORS		VEHICULAR	
1. Pedestrian/Bicyclist at Intersection 2. Pedestrian/Bicyclist Not at Intersection		HUMAN 1. Alcohol Involvement 2. Backing Unsafely 3. Driver Inattention (Indicate)* 4. Driver Inexperience (Indicate)* 5. Drugs (Illegal) 6. Failure to Yield Right-of-Way 7. Fell Asleep 8. Following Too Closely 9. Illness 10. Lost Consciousness 11. Passenger Distraction 12. Passing or Lane Usage Improper 13. Pedestrian's/Bicyclist's Error/Confusion 14. Physical Disability 15. Prescription Medication 16. Traffic Control Disregarded 17. Turning Improperly 18. Unsafe Speed 19. Unsafe Lane Changing 20. Other Human*		41. Accelerator Defective 42. Brakes Defective 43. Headlights Defective 44. Other Lighting Defects 45. Oversized Vehicle 46. Steering Failure 47. Tire Failure/Inadequate 48. Tow Hitch Defective 49. Windshield Inadequate 60. Other Vehicular* ENVIRONMENTAL 61. Animal's Action 62. Glare 63. Lane Marking Improper/Inadequate 64. Obstruction/Debris 65. Pavement Defective 66. Pavement Slippery 67. Shoulders Defective/Improper 68. Traffic Control Device Improper/Non-Working 69. View Obstructed/Limited 80. Other Environmental*	
PEDESTRIAN/BICYCLIST ACTION 1. Crossing, With Signal 2. Crossing, Against Signal 3. Crossing, No Signal, Marked Crosswalk 4. Crossing, No Signal or Crosswalk 5. Riding/Walking Along Highway With Traffic 6. Riding/Walking Along Highway Against Traffic 7. Emerging from in Front of Behind Parked Vehicle 8. Going To From Stopped School Bus 9. Getting On/Off Vehicle Other Than School Bus 10. Pushing/Working On Car 11. Working in Roadway 12. Playing in Roadway 13. Other Actions in Roadway* 14. Not in Roadway (Indicate)*		TRAFFIC CONTROL 1. None 2. Traffic Signal 3. Stop Sign 4. Flashing Light 5. Yield Sign 6. Officer/Guard 7. No Passing Zone 8. RR Crossing Sign 9. RR Crossing Flashing Lt. 10. RR Crossing Gates 11. Stopped School Bus - Red Lights Flashing 12. Highway Work Area 20. Other*		DIRECTION OF TRAVEL Vehicle 1 Vehicle 2 Vehicle 3 Vehicle 4 Vehicle 5 Vehicle 6 Vehicle 7 Vehicle 8	
LIGHT CONDITIONS 1. Daylight 2. Dawn 3. Dusk 4. Dark-Road Lighted 5. Dark-Road Unlighted		ROADWAY CHARACTER 1. Straight and Level 2. Straight and Grade 3. Straight at Hillcrest 4. Curve and Level 5. Curve and Grade 6. Curve at Hillcrest		PRE-ACCIDENT VEHICLE ACTION 1. Going Straight Ahead 2. Making Right Turn 3. Making Right Turn on Red 4. Making Left Turn 5. Making Left Turn on Red 6. Making U Turn 7. Starting from Parking 8. Starting in Traffic 9. Slowing or Stopping 10. Stopped in Traffic 11. Entering Parked Position 12. Parked 13. Avoiding Object in Roadway 14. Changing Lanes 15. Overtaking 16. Merging 17. Backing 20. Other*	
ROADWAY SURFACE CONDITION 1. Dry 2. Wet 3. Muddy 4. Snow/Ice 5. Slush 6. Other*		WEATHER 1. Clear 2. Cloudy 3. Rain 4. Snow 5. Sleet/Hail/Freezing Rain 6. Fog/Smog/Smoke 7. Other*		LOCATION OF FIRST EVENT 1. On Roadway 2. Off Roadway	
WHICH VEHICLE OCCUPIED 1. Vehicle No. 1 2. Vehicle No. 2 3. Bicyclist 4. Other*		POSITION IN/ON VEHICLE 1. Driver 2. 2-7. Passengers 8. Riding/Hanging On Outside		SAFETY EQUIPMENT USED 1. None 2. Lap Belt 3. Harness 4. Lap Belt and Harness 5. Child Restraint 6. Helmet 7. Other*	
EJECTION FROM VEHICLE 1. Not Ejected 2. Partially Ejected 3. Ejected		TYPE OF PHYSICAL COMPLAINT 1. Head 2. Face 3. Eye 4. Neck 5. Chest 6. Back 7. Shoulder-Upper Arm 8. Elbow-Lower Arm-Hand 9. Abdomen - Pelvis 10. Hip-Upper Leg 11. Knee-Lower Leg-Foot 12. Entire Body		TYPE OF ACCIDENT 1. Collision with Other Motor Vehicle 2. Collision with Pedestrian 3. Collision with Bicyclist 4. Collision with Animal 5. Collision with Railroad Train 6. Collision with Other Object (Not Fixed)* 7. Collision with Fixed Object 8. Light Support/Utility Pole 9. Guide Rail 10. Crash Cushion 11. Sign Post 12. Tree 13. Building/Wall 14. Curbing 15. Fence 16. Bridge Structure 17. Culvert/Head Wall 18. Median/Barrier 19. Snow Embankment 20. Earth Embankment/Rock Cut/Ditch 21. Fire Hydrant 22. Other Fixed Object* 23. Non-Collision 24. Other	
VICTIM'S PHYSICAL AND EMOTIONAL STATUS 1. Apparent Death 2. Unconscious 3. Semi-conscious 4. Incoherent 5. Shock 6. Conscious		INJURED TAKEN 17 BY 18 TO 19		G	

APPENDIX B

CRASHPC Output

Printing Picture:

CROCH



DAMAGE DESCRIPTION

APPENDIX C

Air Bag Supplement

ACCIDENT SUMMARY

ACCIDENT DATE 01/90

POLICE INVESTIGATED (1,2,9)*

TOWN OF

City - - - - County - - -

GENERAL LOCALITY

- (1) Freeway, Limited Access
- (2) Urban (City)
- (3) Urban-Rural (mixed)
- (4) Rural, Fields

CONFIGURATION (First Harm)

- (0) Struck Object or Pedestrian
- (1) Rear-End
- (2) Head-On
- (3) Rear-to-Rear
- (4) Angle
- (5) Sideswipe-Same Direction
- (5) Sideswipe-Opposite Direct.
- (7) NonCollision Fell from Veh
- (9) NonImpact Deployment
- (9) Unknown

FIRE INVOLVED (0) None

- (1) AirBag Vehicle
- (2) Other Vehicle
- (3) Both Vehicles
- (9) Unknown

NUMBER: VEHICLES INVOLVED

(8)=8 or more

PERSONS INVOLVED

INJURED PERSONS

MAXIMUM AIS IN ACCIDENT

OTHER VEHICLE: MAXIMUM AIS

PRIME/DEPLOY IMPACT w AB VEH:
EVENT NUMBERCDC 10-61111-A

TOTAL DELTA-V

Model Year, Make, Model, Body Type:

1982 PETERBILT TRACTOR-TRAILER

AIRBAG VEHICLE INSPECTION

DATE VEH. INSPECTED 01/90

REASON VEHICLE NOT INSPECTED

- (0) Not Required
 - (1) Inspection Completed
 - (2) Cannot be Located**
 - (3) Repaired or Destroyed**
 - (5) Refusal or Impounded**
 - (7) Other*
- **Specify: _____

IMPACT DATA OBTAINED

- (0) No Data Obtained
- (1) CDC Only
- (2) Crush Profile Only
- (3) Trajectory Data Only
- (4) CDC and Crush Profile
- (5) CDC and Trajectory
- (6) Crush and Trajectory
- (7) CDC, Crush & Trajectory

BASIS OF DELTA-V

- (0) Not Computed (Unknown Why)
- (1) CRASH - Damage Only
- (2) CRASH - Damage+Trajectory
- (3) Missing Vehicle Algorithm
- (4) Yielding Object Algorithm
- (5) Unknown Basis
- (6) One Vehicle Beyond Scope
- (7) Collision Beyond Scope
- (8) Insufficient Data

VEHICLE HISTORY

HAS AIRBAG VEHICLE BEEN IN
ANY PRIOR IMPACTS (1,2,9)*HAS ANY PRIOR MAINTENANCE/SERVICE
BEEN PERFORMED ON SYSTEM(1,2,9)*

*Describe: _____

AIRBAG VEHICLE: FLEET ACURAVIN MILEAGE 6992

S STEM READINESS LAMP
(In Instrument Cluster)

P E-IMPACT LAMP CONDITION

- (1) Functioning/ProvedOut
- (2) Inoperative
- (9) Unknown

D IVER'S REPORT OF
PRE-IMPACT FLASHING

- (00) No Flashing Reported
- (01) Continuous Flashing
- (02) -- >Number of Flashes
- (11)
- (12) Constant Light
- (19) Flashing, Unkn Number
- (88) Not App (system removed)
- (99) Unknown

PERIOD OF PRE-IMPACT FLASHING

- (0) No Flashing
- (1) Same Day as Impact
- (2) Prior Day
- (3) Prior Two Days
- (4) Prior Week
- (5) Prior Month
- (6) Over One Month
- (9) Unknown

F IST-IMPACT LAMP CONDITION

- (1) Functioning/ProvedOut
- (2) Inoperative
- (9) Unknown

F IST-IMPACT FLASHING

- (00) No Flashing
- (01) Continuous Flashing
- (02) -- >Number of Flashes
- (11)
- (12) Constant Light
- (19) Flashing, Unkn Number
- (88) Not Appl (removed)
- (99) Unknown

AIRBAG VEHICLE
FIRST HARMFUL EVENT

13

- (01) Fire or explosion
- (02) Immersion
- (03) Gas Inhalation
- (04) Fell from vehicle
- (05) Injured in vehicle
- (06) Other noncollision (specify):
- (07) Overturn
- (08) Jackknife with intraunit damage
Collision With:
- (09) Pedestrian
- (10) Pedalcyclist
- (11) Railway train
- (12) Animal
- (13) Motor vehicle in transport (same roadway)
- (14) Motor vehicle in transport (other roadway)
- (15) Parked motor vehicle
- (16) Other type nonmotorist (specify):
- (17) Thrown or falling object
- (18) Boulder
- Collision with Fixed Object:
- (20) Building
- (21) Impact attenuator/Crash Cushion
- (22) Bridge pier or abutment
- (23) Bridge parapet end
- (24) Bridge rail
- (25) Guardrail
- (26) Concrete traffic barrier
- (27) Median barrier
- (28) Other longitudinal barrier (specify):
- (29) Highway/Traffic sign post
- (30) Overhead sign support
- (31) Luminaire/Light support
- (32) Utility pole
- (33) Other post, pole, or support (specify):
- (34) Culvert
- (35) Curb
- (36) Ditch
- (37) Embankment-earth
- (38) Embankment-rock, stone or concrete
- (39) Fence (wooden, wire, chain link, etc.)
- (40) Wall (stone, rock, metal, etc.)
- (41) Fire hydrant
- (42) Shrubbery
- (43) Tree
- (44) Other fixed object (specify):
- (45) Pavement surface irregularity (pothole, grooved, grates)
- (99) Unknown

AIRBAG VEHICLE IMPACT SUMMARY

VEHICLE ROLE

- (1) Non-collision
(2) Striking Unit
(3) Struck Unit
(4) Both Striking and Struck
(5) Unknown

MANNER OF LEAVING SCENE

- (1) Driven
(2) Towed-due to damage
(3) Towed - not for damage
(4) Towed - details unknown
(5) Abandoned
(6) Unknown

NUMBER OF IMPACT EVENTS

- (8) 8 or more, (9) Unknown

ROLLOVER

- (0) No Rollover
(1) First Event
(2) Subsequent Event
(3) Yes, Unknown Event
(9) Unknown

OVERRIDE/UNDERRIDE

- (1) No over/underride
(2) Override - 1st CDC
(3) - Other CDC
(4) Underride - 1st CDC
(5) - Other CDC
(6) Unknown

AIRBAG VEHICLE DAMAGE

- CODES: (1) Yes, DAMAGED
(2) No Damage
(9) Unknown

LEFT FRONT FENDER DAMAGE

RIGHT FRONT FENDER DAMAGE

CENTER TOP OF GRILLE DAMAGE

FRONT BUMPER E.A. STATUS: Left

- (1) Normal
(2) Extended
(3) Partial Compression
(4) Complete Compression
(5) Not Applicable
(6) Unknown

FIRST AIRBAG VEHICLE IMPACT:

CONFIGURATION

- (0) Struck Object or Pedestrian
(1) Rear-End
(2) Head-On
(3) Rear-to-Rear
(4) Angle
(5) Sideswipe - Same Direction
(6) Sideswipe-Opposite Direct.
(7) NonCollision Fell from Veh
(8) NonImpact Deployment
(9) Unknown

CDC 01 - EYE W - 1

OBJECT CONTACTED: TRAILER UNIT TIRES

PRIMARY/DEPLOYMENT IMPACT:

EVENT NUMBER

TOTAL DELTA-V

LONGITUDINAL DELTA-V

CONFIGURATION

- (0) Struck Object or Pedestrian
(1) Rear-End
(2) Head-On
(3) Rear-to-Rear
(4) Angle
(5) Sideswipe - Same Direction
(6) Sideswipe-Opposite Direct.
(7) NonCollision Fell from Veh
(8) NonImpact Deployment
(9) Unknown

CDC 01 - EYE W - 1

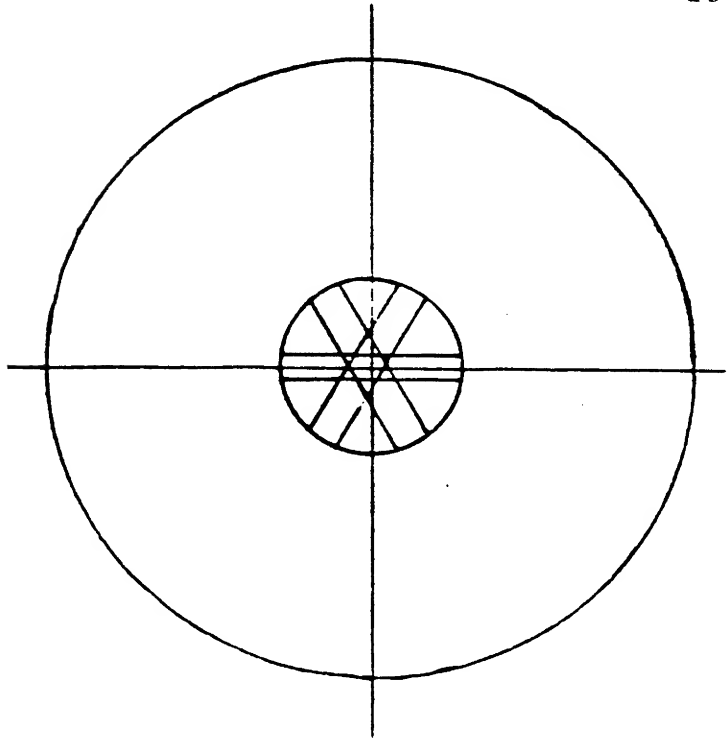
OBJECT CONTACTED: TRAILER UNIT TIRES

NOTES:

A RBAG SYSTEM DAMAGE		CONDITION OF DEPLOYED BAG		1
CODES: (1) Yes, Damaged* (2) No, Intact (8) Not App.(Removed) (9) Unknown		(1) Bag Intact (2) Split or Torn* (3) Cut by Object in Impact* (4) Cut after Accident* (5) Other (e.g., burned)* (8) N/A (not deployed) (9) Unknown		
AIRBAG MODULE				
SENSORS: Left Front ?				
Center Front ?				
Right Front ?				
Rear, Cowl ?		*DESCRIBE System and Bag Damage: 		
DIAGNOSTIC MODULE				
WIRING				
KNEE DIVERter				
INDICATION OF DISCONNECTED OR LOOSE ELECTRICAL CONNECTORS				

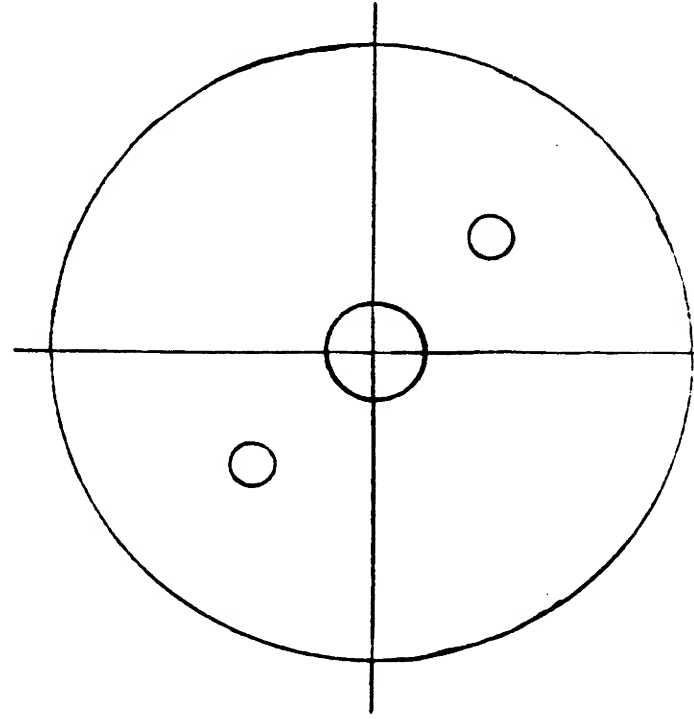
NOTE DAMAGE AND CONTACT MARKS ON AIRBAG DIAGRAMS BELOW:

NO EVIDENCE OF CONTACT



FRONT

TOP



BOTTOM

OCCUPANTS of AIRBAG CAR		NOTES:	
NUMBER OF OCCUPANTS IN VEHICLE (8) 8 or more	<u>1</u>		
NUMBER OF INJURED PERSONS	<u>1</u>		
MAXIMUM AIS IN AIRBAG VEHICLE (0) No Injury (1-6) AIS Severity (7) Injured, Unknown Severity (9) Unknown	<u>1</u>		
DRIVER AGE <u>40</u> SEX <u>MALE</u>			
NUMBER OF DRIVER INJURIES	<u>2</u>		
SOURCE OF BEST INJURY DATA	<u>7</u>		
(0) Not Injured (1) Autopsy w/wo med. records (2) Hospital Medical Records (3) Emergency Room only (4) Private physician, Clinic (5) Lay Coroner Report (6) EMS Personnel (7) Interviewee (8) Police (9) Unknown			

MAXIMUM AIS BY BODY REGION			
REGION	MAX AIS		CONTACT
Head/Neck/Face	_____		____
Chest	_____		____
Abdomen	_____		____
Leg/Hips	_____	____	
Other (Arms)	<u>1</u>	____	
DRIVER MAXIMUM	<u>1</u>	____	

EJECTION: Extent <u>NONE</u>			
Portal <u>N/A</u>			

DRIVER BELT USAGE: (1) Used (2) Not Used (9) Unknown 1

Evidence: DRIVER INTERVIEW

DRIVER POSTURE: Any Comments Recorded (1) Yes, (2) No 1

Describe driver's posture and position on seat including specific comments on head, torso, buttocks, legs and feet. Also note hand and arm position. Did driver brace before crash? Describe:

NORMAL POSITION, BOTH HANDS BRACING AGAINST
STEERING WHEEL

DRIVER FOREIGN OBJECTS: Comments Recorded (1) Yes, (2) No 1

Was driver wearing contact lenses or eyeglasses? Or holding any foreign object at the time of the impact (packages on lap, pipe, food, bottle, cigarette, etc.)? Did any lenses, objects, or jewelry play any role?:

EYEGLASSES, DISPLACED FROM FACE

DRIVER COMMENTS: Comments Recorded (1) Yes, (2) No 1

Was the driver aware that the vehicle was equipped with a supplemental restraint system? Did driver offer any comments on smoke, noise, etc.? Did the driver comment on the airbag as a restraint system? Describe:

UNUSUAL ODOR, NO SMOKE OR RUST

PASSENGER-AIRBAG CONTACT (1) Yes, (2) No, (9) Unknown 2

Describe: NO PASSENGER

APPENDIX D

NASS Vehicle Forms

GENERAL VEHICLE FORM

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

<p>1. Primary Sampling Unit Number _____</p> <p>2. Case Number — Stratum <u>90-07</u></p> <p>3. Vehicle Number <u>01</u></p> <hr/> <p align="center">VEHICLE IDENTIFICATION</p> <hr/> <p>4. Vehicle Model Year <u>90</u> Code the last two digits of the model year (99) Unknown</p> <p>5. Vehicle Make (specify): <u>54</u> <u>ACURA</u> Applicable codes are found in your NASS CDS Data Collection, Coding, and Editing Manual. (99) Unknown</p> <p>6. Vehicle Model (specify): <u>032</u> <u>LEGEND LS V-6</u> Applicable codes are found in your NASS CDS Data Collection, Coding, and Editing Manual. (999) Unknown</p> <p>7. Body Type <u>02</u> Note: Applicable codes are found on the back of this page.</p> <p>8. Vehicle Identification Number <u>J H 4 K A 3 2 7 X L C - - - - -</u> (<u>DELETED</u>) Left justify; Slash zeros and letter Z (Ø and Z) No VIN — Code all zeros Unknown — Code all nine's</p> <hr/> <p align="center">OFFICIAL RECORDS</p> <hr/> <p>9. Police Reported Vehicle Disposition <u>1</u> (0) Not towed due to vehicle damage (1) Towed due to vehicle damage (9) Unknown</p> <p>10. Police Reported Travel Speed <u>99</u> Code to the nearest mph (NOTE: 00 means less than 0.5 mph) (97) 96.5 mph and above (99) Unknown</p>	<p>11. Police Reported Alcohol or Drug Presence <u>0</u> (0) Neither alcohol nor drugs present (1) Yes (alcohol present) (2) Yes (drugs present) (3) Yes (alcohol and drugs present) (4) Yes (alcohol or drugs present—specifics unknown) (7) Not reported (8) No driver present (9) Unknown</p> <p>12. Alcohol Test Result for Driver <u>96</u> Code actual value (decimal implied before first digit—0.xx) (95) Test refused (96) None given (97) AC test performed, results unknown (98) No driver present (99) Unknown</p> <p>Source _____</p> <hr/> <p align="center">ACCIDENT RELATED</p> <hr/> <p>13. Speed Limit <u>45</u> (00) No statutory limit Code posted or statutory speed limit (99) Unknown</p> <p>14. Attempted Avoidance Maneuver <u>02</u> (00) No impact (01) No avoidance actions (02) Braking (no lockup) (03) Braking (lockup) (04) Braking (lockup unknown) (05) Releasing brakes (06) Steering left (07) Steering right (08) Braking and steering left (09) Braking and steering right (10) Accelerating (11) Accelerating and steering left (12) Accelerating and steering right (97) No driver present (98) Other action (specify): _____ (99) Unknown</p> <p>15. Accident Type <u>83</u> Applicable codes may be found on the back of page two of this field form (00) No impact Code the number of the diagram that best describes the accident circumstance (98) Other accident type (specify): _____ (99) Unknown</p>
---	--

CODES FOR BODY TYPE

CDS APPLICABLE VEHICLES

Automobiles

- (01) Convertible (excludes sun-roof, t-bar)
- (02) 2-door sedan, hardtop, coupe
- (03) 3-door/2-door hatchback
- (04) 4-door sedan, hardtop
- (05) 5-door/4-door hatchback
- (06) Station wagon (excluding van and truck based)
- (08) Other automobile type (specify): _____

-
- (09) Unknown automobile type

Automobile Derivatives

- (10) Auto based pickup (includes El Camino, Caballero, Ranchero, and Brat)
- (11) Auto based panel (cargo station wagon, includes auto based ambulance/hearse)
- (12) Large limousine—more than four side doors or stretched chassis

Utility Vehicles

- (13) Short utility— not truck based (includes Jeep CJ-5, Jeep CJ-7, Renegade, Landrover, Pre-78 Bronco, Landcruiser, Thing)
- (14) Truck based utility (2-door; includes Blazer, Bronco— 78 on, Bronco II, Jimmy, Ramcharger, Cherokee, Trailduster, Scout)

Van Based Light Trucks (· 10,000 lbs GVWR)

- (20) Minivan (Lumina APV, Astro, Caravan, Plymouth Vista, Aerostar, Safari, Voyager [84 and after], Dodge Vista, Mini Ram Van, Toyota Cargo Van, Toyota Van, Vanagon, VW Bus, Kombi)
- (21) Standard van (Sportvan, Chevy Van, Club Wagon, Ford Econoline, Ram Van, Chateau, Ram Wagon, Vandura, Rally, Voyager [83 and before], Beauville, Sportsman)
- (28) Other van type (specify): _____
- (29) Unknown van type

Light Conventional Trucks (Pickup Style Cab, 10,000 lbs GVWR)

- (30) Compact pickup (· 4,500 lbs. GVWR, S-10, LUV, Ram 50, Rampage, Courier, Ranger, S-15 Pup, Mazda Pickup, Mitsubishi Truck, Nissan Pickup, Arrow Pickup, Scamp, Toyota Pickup, VW Pickup)
- (31) Standard pickup (4,500 to 10,000 lbs. GVWR, C10 - C30, K10 - K30, T10, D100 - D350, W150 - W350, F100 - F350, Comanche, J10 - J30, Dakota)
- (32) Pickup with slide-in camper
- (33) Truck based station wagon (4-door; includes Suburban, Travelall, Wagoneer)
- (34) Light truck based suburban limousine
- (35) Convertible pickup
- (39) Unknown (pickup style) light conventional truck type

Other Light Trucks (· 10,000 lbs GVWR)

- (40) Cab chassis based (includes rescue vehicle, light stake, dump, and tow truck)
- (41) Truck based panel
- (42) Light truck based motorhome (chassis mounted)
- (47) Other light conventional truck type (not a pickup) (specify): _____
- (48) Unknown other light truck type (not a pickup)
- (49) Unknown light vehicle type (automobile, van, or light truck)

OTHER VEHICLES

Buses (Excludes Van Based)

- (50) School bus (designed to carry students, not cross country or transit)
- (58) Other bus type (e.g., transit, intercity, bus based motorhome) (specify): _____
- (59) Unknown bus type

Medium/Heavy Trucks (· 10,000 lbs GVWR)

- (60) Step van
- (61) Single unit straight truck (10,000 lbs · GVWR · 26,000 lbs)
- (62) Single unit straight truck (· 26,000 lbs GVWR)
- (63) Medium/heavy truck based motorhome
- (64) Truck-tractor with no cargo trailer
- (65) Truck-tractor pulling one trailer
- (66) Truck-tractor pulling two or more trailers
- (67) Truck-tractor (unknown if pulling trailer)
- (68) Unknown medium/heavy truck type
- (69) Unknown truck type (light/medium/heavy)

Motored Cycles (Does Not Include All-Terrain Vehicles/Cycles)

- (70) Motorcycle
- (71) Moped (motorized bicycle)
- (78) Other motored cycle type (minibike, motorscooter) (specify): _____
- (79) Unknown motored cycle type

Other Vehicles

- (80) ATV (All-Terrain Vehicle) and ATC (All-Terrain Cycle)
- (88) Other vehicle type (specify): _____
- (99) Unknown body type

OCCUPANT RELATED

16. Driver Presence in Vehicle 1
 (0) Driver not present
 (1) Driver present
 (9) Unknown
17. Number of Occupants This Vehicle 01
 (00-96) Code actual number of occupants for this vehicle
 (97) 97 or more
 (99) Unknown
18. Number of Occupant Forms Submitted 01

VEHICLE WEIGHT ITEMS

19. Vehicle Curb Weight 03,100
3139 Code weight to nearest 100 pounds.
 (010) Less than 1050 pounds
 (135) 13,500 lbs or more
 (999) Unknown
 Source:
20. Vehicle Cargo Weight 0000
00 Code weight to nearest 100 pounds.
 (00) Less than 50 pounds
 (97) 9,650 lbs or more
 (99) Unknown

RECONSTRUCTION DATA

21. Towed Trailing Unit 0
 (0) No towed unit
 (1) Yes – towed trailing unit
 (9) Unknown
22. Documentation of Trajectory Data for This Vehicle 0
 (0) No
 (1) Yes
23. Post Collision Condition of Tree or Pole (for Highest Delta V) 0
 (0) Not collision (for highest delta V) with tree or pole
 (1) Not damaged
 (2) Cracked/sheared
 (3) Tilted < 45 degrees
 (4) Tilted ≥ 45 degrees
 (5) Uprooted tree
 (6) Separated pole from base
 (7) Pole replaced
 (8) Other (specify):

 (9) Unknown

24. Rollover 0
 (0) No rollover (no overturning)
 Rollover (primarily about the longitudinal axis)
 (1) Rollover, 1 quarter turn only
 (2) Rollover, 2 quarter turns
 (3) Rollover, 3 quarter turns
 (4) Rollover, 4 or more quarter turns (specify):

 (5) Rollover – end-over-end (i.e., primarily about the lateral axis)
 (9) Rollover (overturn), details unknown

OVERRIDE/UNDERRIDE (THIS VEHICLE)

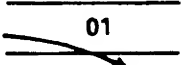
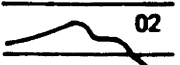
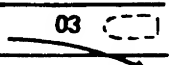
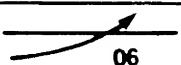

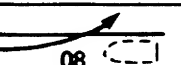
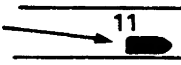


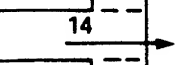
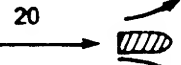
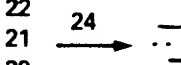
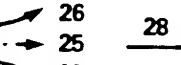
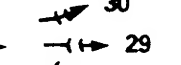
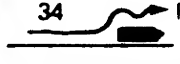
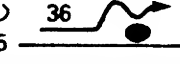
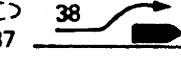
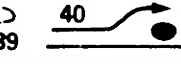
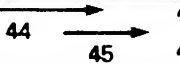
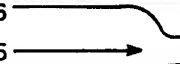

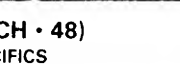



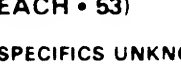

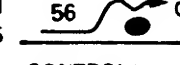
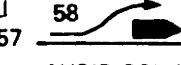
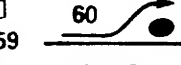
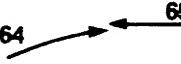


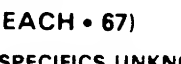

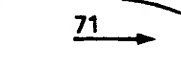
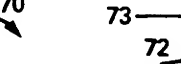

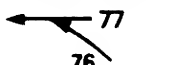
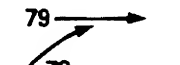

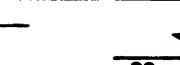

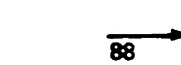

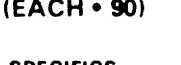
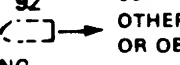




25. Front Override/Underride (this vehicle) 0
26. Rear Override/Underride (this vehicle) 0
 (0) No override/underride, or not an end-to-end impact
 Override (see specific CDC)
 (1) 1st CDC
 (2) 2nd CDC
 (3) Other not automated CDC (specify):

 Underride (see specific CDC)
 (4) 1st CDC
 (5) 2nd CDC
 (6) Other not automated CDC (specify):

 (7) Medium/heavy truck override
 (9) Unknown

HEADING ANGLE AT IMPACT FOR HIGHEST DELTA V

- Values: (000)-(359) Code actual value
 (997) Noncollision
 (998) Impact with object
 (999) Unknown
27. Heading Angle for This Vehicle 180
28. Heading Angle for Other Vehicle 073
TRAILER UNIT

Category	Configuration	ACCIDENT TYPES (Includes Intent)				
I. Single Driver	A. Right Roadside Departure	 01 DRIVE OFF ROAD	 02 CONTROL/ TRACTION LOSS	 03 AVOID COLLISION WITH VEH., PED., ANIM.	04 SPECIFICS OTHER	05 SPECIFICS UNKNOWN
	B. Left Roadside Departure	 06 DRIVE OFF ROAD	 07 CONTROL/ TRACTION LOSS	 08 AVOID COLLISION WITH VEH., PED., ANIM.	09 SPECIFICS OTHER	10 SPECIFICS UNKNOWN
	C. Forward Impact	 11 PARKED VEH.	 12 STA. OBJECT	 13 PEDESTRIAN/ ANIMAL	 14 END DEPARTURE	15 SPECIFICS OTHER 16 SPECIFICS UNKNOWN
II Same Trafficway Same Direction	D. Rear-End	 20 STOPPED 21, 22, 23	 22 SLOWER 25, 26, 27	 24 DECEL. 29, 30, 31	 26 AVOID COLLISION WITH VEH.	(EACH • 32) SPECIFICS OTHER (EACH • 33) SPECIFICS UNKNOWN
	E. Forward Impact	 34 CONTROL/ TRACTION LOSS	 36 CONTROL/ TRACTION LOSS	 38 AVOID COLLISION WITH VEH.	 40 AVOID COLLISION WITH OBJECT	(EACH • 42) SPECIFICS OTHER (EACH • 43) SPECIFICS UNKNOWN
	F. Sideswipe Angle	 44 SIDESWIPE ANGLE	 46 SIDESWIPE ANGLE	 48 SIDESWIPE ANGLE	 49 SIDESWIPE ANGLE	(EACH • 48) SPECIFICS OTHER (EACH • 49) SPECIFICS UNKNOWN
III Same Trafficway Opposite Direction	G. Head-On	 50 LATERAL MOVE	 51 LATERAL MOVE	 52 HEAD-ON	 53 HEAD-ON	(EACH • 52) SPECIFICS OTHER (EACH • 53) SPECIFICS UNKNOWN
	H. Forward Impact	 54 CONTROL/ TRACTION LOSS	 56 CONTROL/ TRACTION LOSS	 58 AVOID COLLISION WITH VEH.	 60 AVOID COLLISION WITH OBJECT	(EACH • 62) SPECIFICS OTHER (EACH • 63) SPECIFICS UNKNOWN
	I. Sideswipe Angle	 64 LATERAL MOVE	 65 LATERAL MOVE	 66 SIDESWIPE ANGLE	 67 SIDESWIPE ANGLE	(EACH • 66) SPECIFICS OTHER (EACH • 67) SPECIFICS UNKNOWN
IV. Change Trafficway Vehicle Turning	J. Turn Across Path	 68 INITIAL OPPOSITE DIRECTIONS	 69 INITIAL SAME DIRECTIONS	 70 INITIAL SAME DIRECTIONS	 71 INITIAL SAME DIRECTIONS	(EACH • 74) SPECIFICS OTHER (EACH • 75) SPECIFICS UNKNOWN
	K. Turn Into Path	 76 TURN INTO SAME DIRECTION	 77 TURN INTO SAME DIRECTION	 78 TURN INTO OPPOSITE DIRECTIONS	 79 TURN INTO OPPOSITE DIRECTIONS	(EACH • 84) SPECIFICS OTHER (EACH • 85) SPECIFICS UNKNOWN
V. Intersecting Paths (Vehicle Damage)	L. Straight Paths	 86 STRAIGHT PATHS	 87 STRAIGHT PATHS	 88 STRAIGHT PATHS	 89 STRAIGHT PATHS	(EACH • 90) SPECIFICS OTHER (EACH • 91) SPECIFICS UNKNOWN
VI. Miscellaneous	M. Backing Etc.	 92 BACKING VEH.	 93 OTHER VEH. OR OBJECT	 94 OTHER ACCIDENT TYPE	 95 UNKNOWN ACCIDENT TYPE	 96 NO IMPACT

29. Basis for Total Delta V (Highest) 1

Delta V Calculated

- (1) CRASH program – damage only routine
- (2) CRASH program – damage and trajectory routine
- (3) Missing vehicle algorithm

Delta V Not Calculated

- (4) At least one vehicle (which may be this vehicle) is beyond the scope of an acceptable reconstruction program, regardless of collision conditions.
- (5) All vehicles within scope (CDC applicable) of CRASH program but one of the collision conditions is beyond the scope of the CRASH program or other acceptable reconstruction techniques, regardless of adequacy of damage data.
- (6) All vehicles and collision conditions are within scope of one of the acceptable reconstruction programs, but there is insufficient data available.

COMPUTER GENERATED DELTA V

30. Total Delta V

Secondary Highest

13.4 Nearest mph

(NOTE: 00 means less than
0.5 mph)
(97) 96.5 mph and above
(99) Unknown

31. Longitudinal Component of Delta V

+ 13-12.6 Nearest mph

(NOTE: 00 means greater than
-0.5 and less than +0.5 mph)
(± 97) ± 96.5 mph and above
(— 99) Unknown

32. Lateral Component of Delta V

Secondary Highest

-4.6 Nearest mph

(NOTE: 00 means greater than
-0.5 and less than +0.5 mph)
(± 97) ± 96.5 mph and above
(— 99) Unknown

33. Energy Absorption

030400
30401.1 Nearest 100 foot-lbs

(NOTE: 0000 means less than 50 Foot-Lbs)
(9997) 999,650 foot-lbs or more
(9999) Unknown

34. Confidence in Reconstruction Program Results (for Highest Delta V)

- (0) No reconstruction
- (1) Collision fits model – results appear reasonable
- (2) Collision fits model – results appear high
- (3) Collision fits model – results appear low
- (4) Borderline reconstruction – results appear reasonable

35. Type of Vehicle Inspection

- (0) No Inspection
- (1) Complete inspection
- (2) Partial inspection (specify):

VEHICLE TORN APART

36. Is this an AOPS Vehicle?

- (0) No
- (1) Yes

*** STOP: IF THE CDS APPLICABLE VEHICLE WAS NOT INSPECTED (I.E., GV35 = 0), ***
DO NOT COMPLETE THE EXTERIOR AND INTERIOR VEHICLE FORMS.

EXTERIOR VEHICLE FORM

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. Primary Sampling Unit Number	3. Vehicle Number
2. Case Number - Stratum	

VEHICLE IDENTIFICATION

VIN JH4KA327XLC----- Model Year 1990
Vehicle Make (specify): ACURA Vehicle Model (specify): LEGEND LS U-6

LOCATOR

Locate the end of the damage with respect to the vehicle longitudinal center line or bumper corner for end impacts or an undamaged axle for side impacts.

Specific Impact No.	Location of Direct Damage	Location of Field L
1	FRONT BUMPER, 21" DIRECT STARTS 8" LEFT OF CENTER	

CRUSH PROFILE

NOTES: Identify the plane at which the C-measurements are taken (e.g., at bumper, above bumper, at sill, above sill, etc.) and label adjustments (e.g., free space).

Measure and document on the vehicle diagram the location of maximum crush.

Measure C1 to C6 from driver to passenger side in front or rear impacts and rear to front in side impacts.

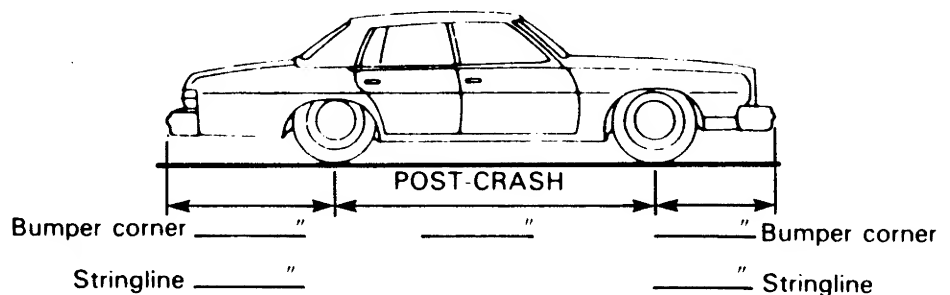
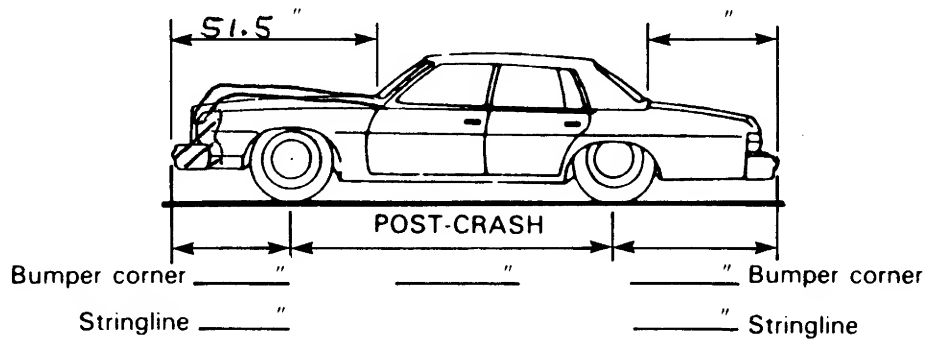
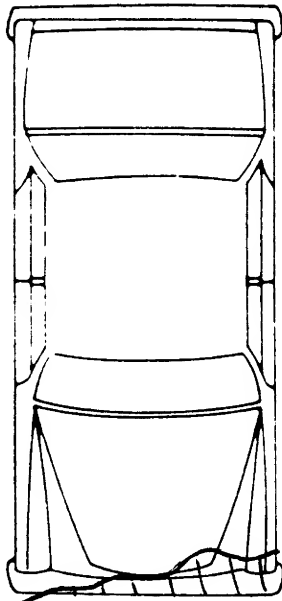
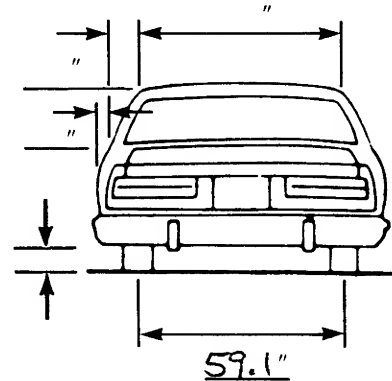
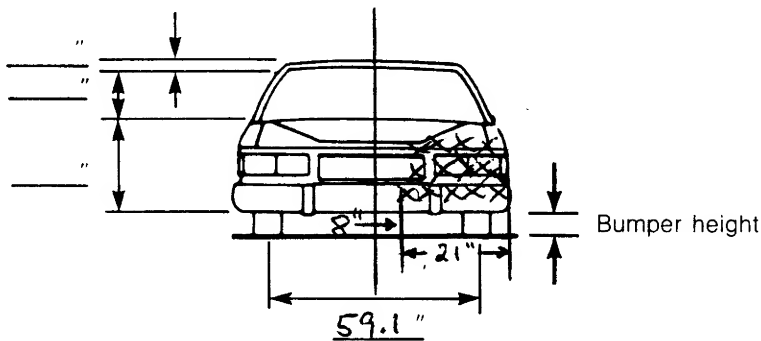
Free space value is defined as the distance between the baseline and the original body contour taken at the individual C locations. This may include the following: bumper lead, bumper taper, side protrusion, side taper, etc. Record the value for each C-measurement and maximum crush.

Use as many lines/columns as necessary to describe each damage profile.

[illegible]

VEHICLE DAMAGE SKETCH

TIRE – WHEEL DAMAGE a. Rotation physically restricted RF <u>2</u> LF <u>2</u> RR <u>2</u> LR <u>2</u> (1) Yes (2) No (8) NA (9) Unk.		ORIGINAL SPECIFICATIONS Wheelbase <u>106.5"</u> Overall Length <u>188.0"</u> Maximum Width <u>68.7"</u> Curb Weight <u>3139 lbs.</u> Average Track <u>59.1"</u> Front Overhang _____ Rear Overhang _____ Engine Size: cyl./ displ. <u>6 / 2.7 liter</u> Undeformed End Width <u>61"</u>		WHEEL STEER ANGLES (For locked front wheels or displaced rear axles only) RF ± _____° LF ± _____° RR ± _____° LR ± _____° Within ± 5 degrees
TYPE OF TRANSMISSION 4-SPD <input type="checkbox"/> Manual <input checked="" type="checkbox"/> Automatic		DRIVE WHEELS <input checked="" type="checkbox"/> FWD <input type="checkbox"/> RWD <input type="checkbox"/> 4WD		
		Approximate Cargo Weight <u>NONE</u>		



NOTES: Sketch new perimeter and cross hatch direct damage and single hatch induced damage on all views. Annotate observations which might be useful in reconstructing the accident (e.g., grass in tire bead, direction of striations, scuff on sidewall, etc.). If pulling trailer, sketch type of trailer and damage received on the back of this page.
Annotate any damage caused by extrication such as component removal by torching, prying, or hydraulic shears.

CODES FOR OBJECT CONTACTED

(99) Unknown event or object

36

COLLISION DEFORMATION CLASSIFICATION**HIGHEST DELTA "V"**

Accident Event Sequence Number	Object Contacted	(1) (2) Direction of Force	(3) Deformation Location	(4) Specific Longitudinal or Lateral Location	(5) Specific Vertical or Lateral Location	(6) Type of Damage Distribution	(7) Deformation Extent
4. <u>01</u>	5. <u>02</u>	6. <u>01</u>	7. <u>F</u>	8. <u>Y</u>	9. <u>E</u>	10. <u>W</u>	11. <u>01</u>

Second Highest Delta "V"

12. <u> </u>	13. <u> </u>	14. <u> </u>	15. <u> </u>	16. <u> </u>	17. <u> </u>	18. <u> </u>	19. <u> </u>
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CRUSH PROFILE

(The crush profile for the damage described in the CDC(s) above should be documented in the appropriate space below. ALL MEASUREMENTS ARE IN INCHES.)

HIGHEST DELTA "V" ESTIMATED CRUSH PROFILE

20. L	21. C1	C2	C3	C4	C5	C6	22. + - D
<u>061</u>	<u>06</u>	<u>09</u>	<u>05</u>	<u>03</u>	<u>01</u>	<u>00</u>	<u>000</u>

Second Highest Delta "V"

23. L	24. C1	C2	C3	C4	C5	C6	25. + - D
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>

26. Are CDCs Documented but Not Coded on The Automated File

- (0) No
(1) Yes

0

27. Researcher's Assessment of Vehicle Disposition

- (0) Not towed due to vehicle damage
(1) Towed due to vehicle damage
(9) Unknown

1

28. Original Wheelbase

Code to the nearest tenth of an inch
(9999) Unknown

106.5

*** STOP: IF THE CDS APPLICABLE VEHICLE WAS NOT TOWED ***
(I.E., GV09 = 0 OR 9), DO NOT COMPLETE THE INTERIOR VEHICLE FORM.



U.S. Department of Transportation
National Highway Traffic Safety
Administration

INTERIOR VEHICLE FORM

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. Primary Sampling Unit Number

2. Case Number - ~~Stratum~~

3. Vehicle Number

INTEGRITY

4. Passenger Compartment Integrity

(00) No integrity loss

Yes, Integrity Was Lost Through

(01) Windshield

(02) Door (side)

(03) Door/hatch (rear)

(04) Roof

(05) Roof glass

(06) Side window

(07) Rear window

(08) Roof and roof glass

(09) Windshield and door (side)

(10) Windshield and roof

(11) Side and rear window

(98) Other combination of above (specify):

(99) Unknown

Door, Tailgate Or Hatch Opening

5. LF 1 6. RF 1 7. LR 0 8. RR 0 9. TG/H 0

(0) No door/gate/hatch

(1) Door/gate/hatch remained closed and operational

(2) Door/gate/hatch came open during collision

(3) Door/gate/hatch jammed shut

(8) Other (specify):

(9) Unknown

Damage/Failure Associated with Door, Tailgate or Hatch Opening in Collision. If IV05-IV09 = 2, Then Code 0.

10. LF 1 11. RF 1 12. LR 0 13. RR 0 14. TG/H 0

(0) No door/gate/hatch or door not opened

Door, Tailgate, or Hatch Came Open During Collision

(1) Door operational (no damage)

(2) Latch/striker failure due to damage

(3) Hinge failure due to damage

(4) Door structure failure due to damage

(5) Door support (i.e., pillar, sill, roof side rail, etc.) failure due to damage

(6) Latch/striker and hinge failure due to damage

(8) Other failure (specify):

(9) Unknown

GLAZING**Glazing Damage from Impact Forces**

15. WS 0 16. LF 0 17. RF 0 18. LR 0 19. RR 0
20. BL 0 21. Roof 2 22. Other 8

(0) No glazing damage from impact forces

(2) Glazing in place and cracked from impact forces

(3) Glazing in place and holed from impact forces

(4) Glazing out-of-place (cracked or not) and not holed from impact forces

(5) Glazing out-of-place and holed from impact forces

(6) Glazing disintegrated from impact forces

(7) Glazing removed prior to accident

(8) No glazing

(9) Unknown if damaged

Glazing Damage from Occupant Contact

23. WS 0 24. LF 0 25. RF 0 26. LR 0 27. RR 0
28. BL 0 29. Roof 0 30. Other 0

(0) No occupant contact to glazing or no glazing

(1) Glazing contacted by occupant but no glazing damage

(2) Glazing in place and cracked by occupant contact

(3) Glazing in place and holed by occupant contact

(4) Glazing out-of-place (cracked or not) by occupant contact and not holed by occupant contact

(5) Glazing out-of-place by occupant contact and holed by occupant contact

(6) Glazing disintegrated by occupant contact

(9) Unknown if contacted by occupant

If No Glazing Damage **And** No Occupant Contact or No Glazing, Then Code IV 31 Through IV 46 As 0

Type of Window/Windshield Glazing

36. BL 2 37. Roof 1 38. Other 0

(0) No glazing contact and no damage, or no glazing

(1) AS-1 - Laminated

(2) AS-2 - Tempered

(3) AS-3 - Tempered-tinted

(4) AS-14 - Glass/Plastic

(8) Other (specify):

(9) Unknown

Window Post-Crash Glazing Status

39. WS 1 40. LF 2 41. RF 2 42. LR 1 43. RR 1
44. BL 1 45. Roof 2 46. Other 0

(0) No glazing contact and no damage, or no glazing

(1) Fixed

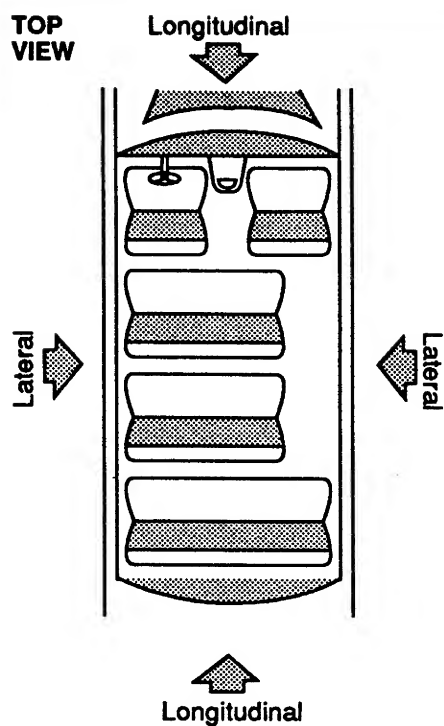
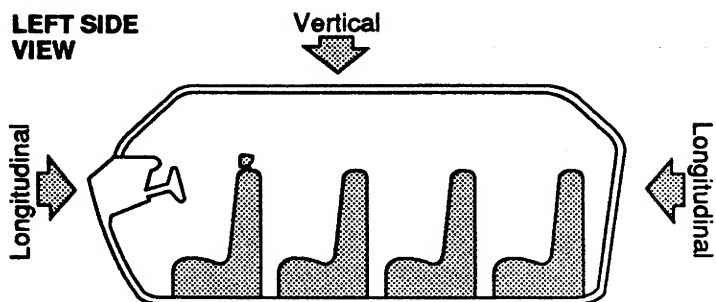
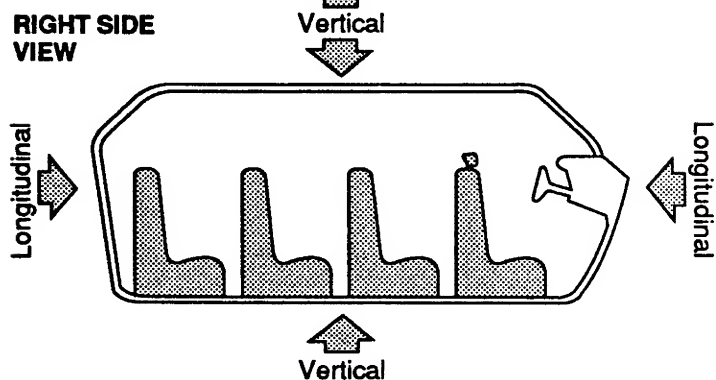
(2) Closed

(3) Partially opened

(4) Fully opened

(9) Unknown

INTRUSION WORK SHEET

TOP
VIEWLEFT SIDE
VIEWRIGHT SIDE
VIEW

Note: Sketch intruded areas

LOCATION OF INTRUSION	INTRUDED COMPONENT	COMPARISON VALUE	—	INTRUDED VALUE	=	INTRUSION	DOMINANT CRUSH DIRECTION
			—		=		
			—		=		
			—		=		
			—		=		
			—		=		
			—		=		
			—		=		
			—		=		
			—		=		
			—		=		
			—		=		
			—		=		
			—		=		
			—		=		
			—		=		

Document no more than the 15 most severe intrusions

OCCUPANT AREA INTRUSION

Note: If no intrusions, leave variables IV 47-IV 86 blank.

	Location of Intrusion	Intruding Component	Magnitude of Intrusion	Dominant Crush Direction
1st	47	48	49	50
2nd	51	52	53	54
3rd	55	56	57	58
4th	59	60	61	62
5th	63	64	65	66
6th	67	68	69	70
7th	71	72	73	74
8th	75	76	77	78
9th	79	80	81	82
10th	83	84	85	86

LOCATION OF INTRUSION

Front Seat

- (11) Left
(12) Middle
(13) Right

Second Seat

- (21) Left
(22) Middle
(23) Right

Third Seat

- (31) Left
(32) Middle
(33) Right

Fourth Seat

- (41) Left
(42) Middle
(43) Right

(98) Other enclosed area (specify):

(99) Unknown

NO INTRUSION

INTRUDING COMPONENT

Interior Components

- (01) Steering assembly
(02) Instrument panel left
(03) Instrument panel center
(04) Instrument panel right
(05) Toe pan
(06) A-pillar
(07) B-pillar
(08) C-pillar
(09) D-pillar
(10) Door panel
(12) Roof (or convertible top)
(13) Roof side rail
(14) Windshield
(15) Windshield header
(16) Window frame
(17) Floor pan
(18) Backlight header
(19) Front seat back
(20) Second seat back
(21) Third seat back
(22) Fourth seat back
(23) Fifth seat back
(24) Seat cushion
(25) Back panel or door surface
(26) Other interior component (specify):

(27) Side panel - forward of the A-pillar

(28) Side panel - rear of the A-pillar

Exterior Components

- (30) Hood
(31) Outside surface of vehicle (specify):
(32) Other exterior object in the environment (specify):
(33) Unknown exterior object
(98) Intrusion of unlisted component(s) ☒
(specify):
(99) Unknown

MAGNITUDE OF INTRUSION

- (1) ≥ 1 inch but < 3 inches
(2) ≥ 3 inches but < 6 inches
(3) ≥ 6 inches but < 12 inches
(4) ≥ 12 inches but < 18 inches
(5) ≥ 18 inches but < 24 inches
(6) ≥ 24 inches
(9) Unknown

DOMINANT CRUSH DIRECTION

- (1) Vertical
(2) Longitudinal
(3) Lateral
(9) Unknown

STEERING COLUMN WORKING DIAGRAMS

STEERING COLUMN COLLAPSE

Steering Column Shear Module Movement



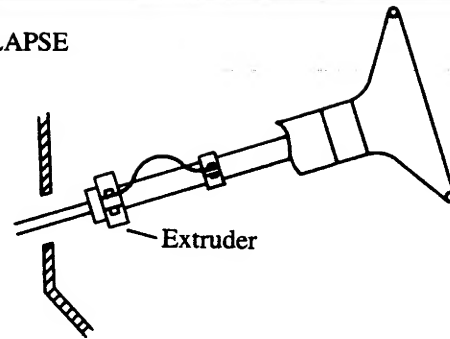
SHEAR CAPSULE



Left —

Right — V = —"

Direction and Magnitude of Steering Column Movement



Extruder

After Compression

Flare Tube

Possible Remaining Starter Grooves At 6 and 12 o'clock

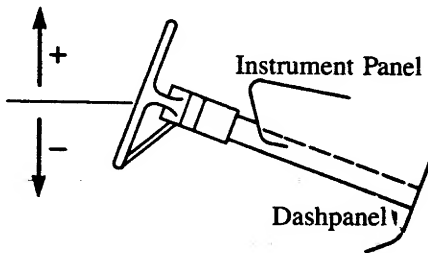
Extruder

Compression = Measurement A

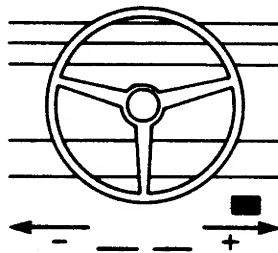
A = —

STEERING COLUMN MOVEMENT

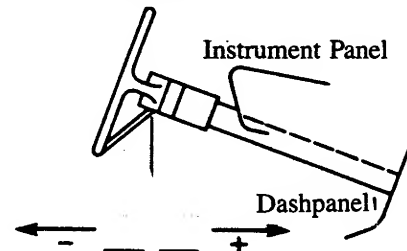
Vertical Movement



Lateral Movement



Longitudinal Movement



	COMPARISON VALUE	—	DAMAGED VALUE	=	MOVEMENT
VERTICAL		—		=	
LATERAL		—		=	
LONGITUDINAL		—		=	

STEERING RIM/SPOKE DEFORMATION

COMPARISON VALUE	—	DAMAGED VALUE	=	DEFORMATION
	—		=	
	—		=	

STEERING COLUMN

87. Steering Column Type 2

- (1) Fixed column
 (2) Tilt column
 (3) Telescoping column COLUMN SET TO UP POSITION
 (4) Tilt and telescoping column
 (8) Other column type (specify):

(9) Unknown

If PDOF \neq 11, 12 or 1, Then Code IV88-IV91 As 9688. Steering Column Collapse Due to Occupant Loading 00

_____ Code actual measured movement to the nearest inch. See coding manual for measurement technique(s).

- (00) No movement, compression, or collapse
 (01-49) Actual measured value
 (50) 50 inches or greater

Estimated movement from observation

- (81) Less than 1 inch
 (82) \geq 1 inch but $<$ 2 inches
 (83) \geq 2 inches but $<$ 4 inches
 (84) \geq 4 inches but $<$ 6 inches
 (85) \geq 6 inches but $<$ 8 inches
 (86) Greater than or equal to 8 inches
 (96) Not assessed (PDOF \neq 11, 12, 1)
 (97) Apparent movement, value undetermined or cannot be measured or estimated
 (98) Nonspecified type column
 (99) Unknown

Direction And Magnitude of Steering Column Movement

89. Vertical Movement + 0090. Lateral Movement 0091. Longitudinal Movement 00

Code the actual measured movement to the nearest inch. See Coding Manual for measurement technique(s)

- (+00) No Steering column movement
 (\pm 01 – \pm 49) Actual measured value
 (\pm 50) 50 inches or greater

Estimated movement from observation

- (\pm 81) \geq 1 inch but $<$ 3 inches
 (\pm 82) \geq 3 inches but $<$ 6 inches
 (\pm 83) \geq 6 inches but $<$ 12 inches
 (\pm 84) \geq 12 inches
 (___96) Not assessed (PDOF \neq 11, 12, 1)
 (___97) Apparent movement $>$ 1 inch but cannot be measured or estimated
 (___99) Unknown

92. Steering Rim/Spoke Deformation 0

_____ Code actual measured deformation to the nearest inch.

- (0) No steering rim deformation
 (1-5) Actual measured value
 (6) 6 inches or more
 (8) Observed deformation cannot be measured
 (9) Unknown

93. Location of Steering Rim/Spoke Deformation 00

(00) No steering rim deformation

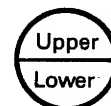
Quarter Sections

- (01) Section A
 (02) Section B
 (03) Section C
 (04) Section D



Half Sections

- (05) Upper half of rim/spoke
 (06) Lower half of rim/spoke
 (07) Left half of rim/spoke
 (08) Right half of rim/spoke



- (09) Complete steering wheel collapse
 (10) Undetermined location
 (99) Unknown

INSTRUMENT PANEL

94. Odometer Reading 069,000

6992 miles—Code mileage to the nearest 1,000 miles

- (000) No odometer
 (001) Less than 1,500 miles
 (300) 299,500 miles or more
 (999) Unknown

Source: _____

95. Instrument Panel Damage from Occupant Contact 1

- (0) No
 (1) Yes
 (9) Unknown

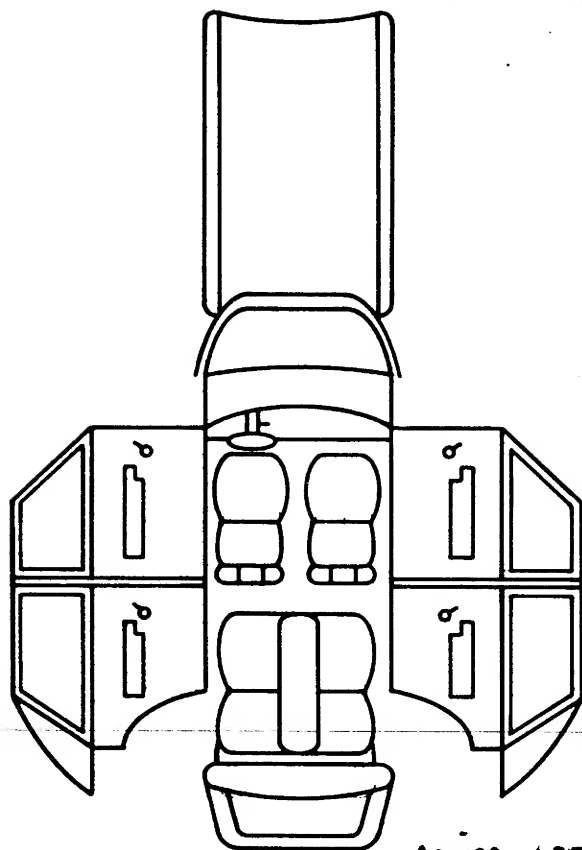
96. Knee Bolsters Deformed from Occupant Contact 0

- (0) No
 (1) Yes
 (8) Not present
 (9) Unknown

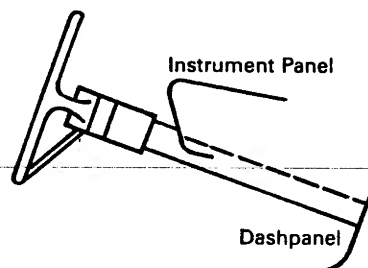
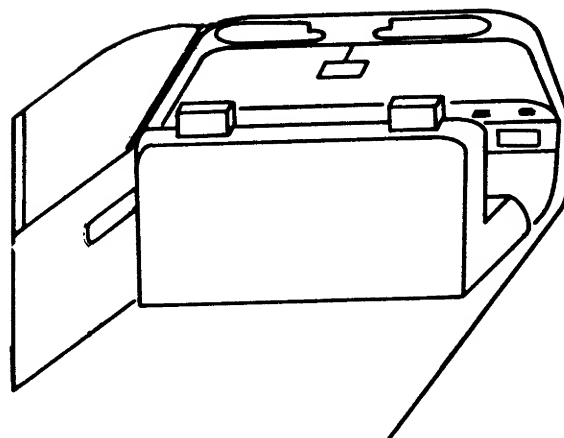
97. Did Glove Compartment Door Open During Collision(s) 0

- (0) No
 (1) Yes
 (8) Not present
 (9) Unknown

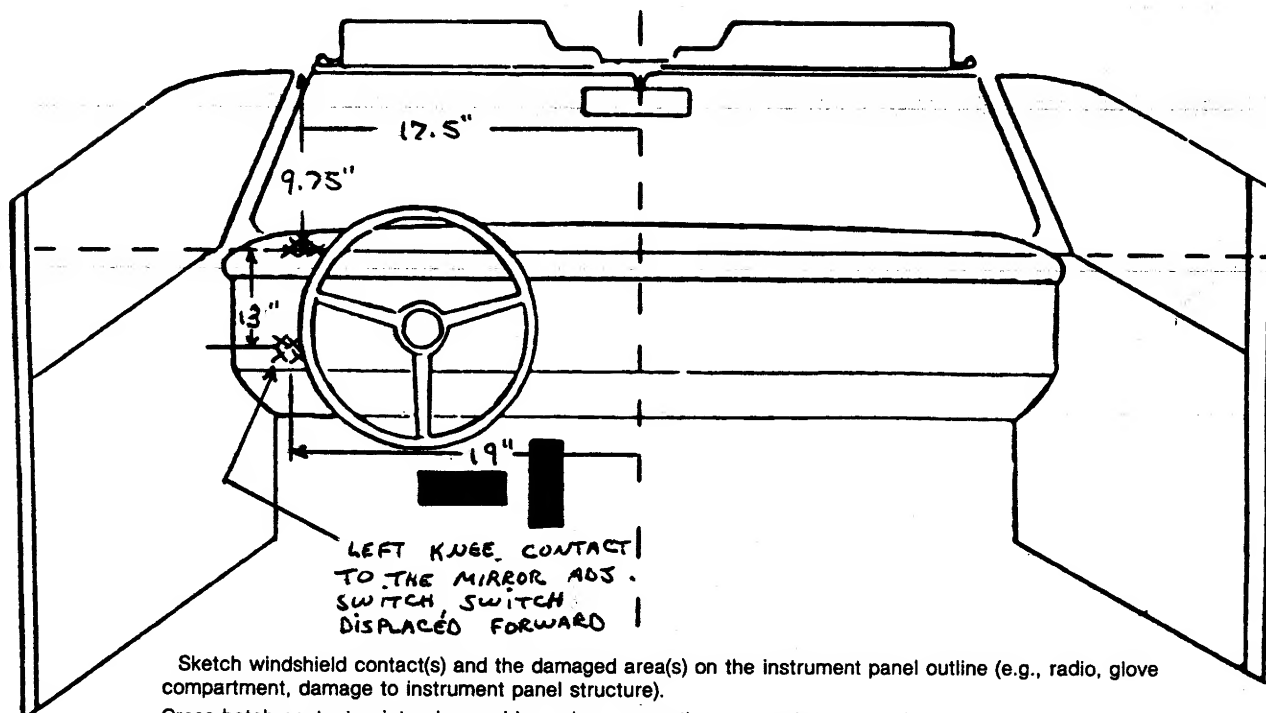
VEHICLE INTERIOR SKETCHES



DRIVER LEFT HAND
CONTACT TO UPPER
PANEL, SCUFF



NO EVIDENCE OF CONTACT
TO AIR BAG



Sketch windshield contact(s) and the damaged area(s) on the instrument panel outline (e.g., radio, glove compartment, damage to instrument panel structure).

Cross hatch contact points, draw spider webs or use other annotation as may be appropriate.

Annotate the contacted area with a letter (begin with A) and list on the Points of Occupant Contact page.

POINTS OF OCCUPANT CONTACT

Contact	Interior Component Contacted	Occupant No. If Known	Body Region If Known	Supporting Physical Evidence	Confidence Level of Contact Point
A	09	1	L. HAND	SCUFF	1
B	09	1	L. KNEE	SWITCH DISPLACED	1
C	45	1	FACE	NONE	1
D					
E					
F					
G					
H					
I					
J					
K					
L					
M					
N					

CODES FOR INTERIOR COMPONENTS

FRONT

- (01) Windshield
- (02) Mirror
- (03) Sunvisor
- (04) Steering wheel rim
- (05) Steering wheel hub/spoke
- (06) Steering wheel (combination of codes 04 and 05)
- (07) Steering column, transmission selector lever, other attachment
- (08) Add on equipment (e.g., CB, tape deck, air conditioner)
- (09) Left instrument panel and below
- (10) Center instrument panel and below
- (11) Right instrument panel and below
- (12) Glove compartment door
- (13) Knee bolster
- (14) Windshield including one or more of the following: front header, A-pillar, instrument panel, mirror, or steering assembly (driver side only)
- (15) Windshield including one or more of the following: front header, A-pillar, instrument panel, or mirror (passenger side only)
- (16) Other front object (specify): _____

- (26) Left side window glass including one or more of the following: frame, window sill, A-pillar, B-pillar, or roof side rail
- (27) Other left side object (specify): _____

- (48) Child safety seat (specify): _____

- (49) Other interior object (specify): _____

RIGHT SIDE

- (30) Right side interior surface, excluding hardware or armrests
- (31) Right side hardware or armrest
- (32) Right A pillar
- (33) Right B pillar
- (34) Other right pillar (specify): _____

ROOF

- (50) Front header
- (51) Rear header
- (52) Roof left side rail
- (53) Roof right side rail
- (54) Roof or convertible top

FLOOR

- (56) Floor including toe pan
- (57) Floor or console mounted transmission lever, including console
- (58) Parking brake handle
- (59) Foot controls including parking brake

REAR

- (60) Backlight (rear window)
- (61) Backlight storage rack, door, etc.
- (62) Other rear object (specify): _____

LEFT SIDE

- (20) Left side interior surface, excluding hardware or armrests
- (21) Left side hardware or armrest
- (22) Left A pillar
- (23) Left B pillar
- (24) Other left pillar (specify): _____

INTERIOR

- (40) Seat, back support
- (41) Belt restraint webbing/buckle
- (42) Belt restraint B-pillar attachment point
- (43) Other restraint system component (specify): _____
- (44) Head restraint system
- (45) Air cushion
- (46) Other occupants (specify): _____

- (47) Interior loose objects

- (25) Left side window glass or frame

CONFIDENCE LEVEL OF CONTACT POINT

- (1) Certain
- (2) Probable
- (3) Possible
- (4) Unknown

AUTOMATIC RESTRAINTS

NOTES: Encode the data for each applicable front seat position. The attributes for the variables may be found below. Restraint systems should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

		Left	Center	Right
F I R S T	Availability	1	-	-
	Function	4	-	-
	Failure	1	-	-

Automatic (Passive) Restraint System Availability

- (0) Not equipped/not available
- (1) Airbag
- (2) Airbag disconnected (specify): _____
- (3) Airbag not reinstalled
- (4) 2 point automatic belts
- (5) 3 point automatic belts
- (6) Automatic belts destroyed or rendered inoperative
- (9) Unknown

Automatic (Passive) Restraint Function

- (0) Not equipped/not available

Automatic Belt

- (1) Automatic belt in use
- (2) Automatic belt not in use
- (3) Automatic belt use unknown

Air Bag

- (4) Airbag deployed during accident
- (5) Airbag deployed inadvertently just prior to accident
- (6) Deployed, accident sequence undetermined
- (7) Nondeployed
- (8) Unknown if deployed
- (9) Unknown

Did Automatic (Passive) Restraint Fail

- (0) Not equipped/not available
- (1) No
- (2) Yes (specify): _____
- (9) Unknown

MANUAL RESTRAINTS

NOTES: Encode the applicable data for each seat position in the vehicle. The attributes for the variables may be found below. Restraint systems should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

If a child safety seat is present, encode the data on the back of this page.

If the vehicle has automatic restraints available, encode the appropriate data on the back of the previous page.

		Left	Center	Right
F I R S T	Availability	4	-	4
	Use	04	-	-
	Failure Modes	1	-	-
S E C O N D	Availability	4	3	4
	Use	-	-	-
	Failure Modes	-	-	-
T H I R D	Availability			
	Use			
	Failure Modes			
O T H E R	Availability			
	Use			
	Failure Modes			

Manual (Active) Belt System Availability

- (0) Not available
- (1) Belt removed/destroyed
- (2) Shoulder belt
- (3) Lap belt
- (4) Lap and shoulder belt
- (5) Belt available – type unknown
- (8) Other belt (specify):

(9) Unknown

Manual (Active) Belt System Use

- (00) None used, not available, or belt removed/destroyed
- (01) Inoperative (specify):
- (02) Shoulder belt
- (03) Lap belt
- (04) Lap and shoulder belt
- (05) Belt used – type unknown

(08) Other belt used (specify):

- (12) Shoulder belt used with child safety seat
- (13) Lap belt used with child safety seat
- (14) Lap and shoulder belt used with child safety seat
- (15) Belt used with child safety seat – type unknown
- (18) Other belt used with child safety seat (specify):

(99) Unknown if belt used

Manual (Active) Belt Failure Modes During Accident

- (0) No manual belt used or not available
- (1) No manual belt failure(s)
- (2) Manual belt failure(s) (encode all that apply above)
 - [A] Torn webbing (stretched webbing not included)
 - [B] Broken buckle or latchplate
 - [C] Upper anchorage separated
 - [D] Other anchorage separated (specify):
- [E] Broken retractor
- [F] Other manual belt failure (specify):

(9) Unknown

CHILD SAFETY SEAT FIELD ASSESSMENT

When a child safety seat is present enter the occupant's number in the first row and complete the column below the occupant's number using the codes listed below. Complete a column for each child safety seat present.

Occupant Number						
1. Type of Child Safety Seat						
2. Child Safety Seat Orientation						
3. Child Safety Seat Harness Usage						
4. Child Safety Seat Shield Usage						
5. Child Safety Seat Tether Usage						
6. Child Safety Seat Make/Model	Specify Below for Each Child Safety Seat					

1. Type of Child Safety Seat

- (0) No child safety seat
- (1) Infant seat
- (2) Toddler seat
- (3) Convertible seat
- (4) Booster seat
- (7) Other type child safety seat (specify):

- (8) Unknown child safety seat type
- (9) Unknown if child safety seat used

2. Child Safety Seat Orientation

- (00) No child safety seat

Designed for Rear Facing for This Age/Weight

- (01) Rear facing
- (02) Forward facing
- (03) Other orientation (specify):

- (04) Unknown orientation

Designed for Forward Facing for This Age/Weight

- (11) Rear facing
- (12) Forward facing
- (18) Other orientation (specify):

- (19) Unknown orientation

Unknown Design or Orientation for This Age/Weight, or Unknown Age/Weight

- (21) Rear facing
- (22) Forward facing
- (28) Other orientation (specify):

- (29) Unknown orientation

- (99) Unknown if child safety seat used

3. Child Safety Seat Harness Usage

4. Child Safety Seat Shield Usage

5. Child Safety Seat Tether Usage

Note: Options Below Are Used for Variables 3-5.

- (00) No child safety seat

Not Designed with Harness/Shield/Tether

- (01) After market harness/shield/tether added, not used
- (02) After market harness/shield/tether used
- (03) Child safety seat used, but no after market harness/shield/tether added
- (09) Unknown if harness/shield/tether added or used

Designed with Harness/Shield/Tether

- (11) Harness/shield/tether not used
- (12) Harness/shield/tether used
- (19) Unknown if harness/shield/tether used

Unknown if Designed with Harness/Shield/Tether

- (21) Harness/shield/tether not used
- (22) Harness/shield/tether used
- (29) Unknown if harness/shield/tether used

- (99) Unknown if child safety seat used

6. Child Safety Seat Make/Model

(Specify make/model and occupant number)

HEAD RESTRAINTS/SEAT EVALUATION

NOTES: Encode the applicable data for **each seat position** in the vehicle. The attributes for these variables may be found at the bottom of the page. Head restraint type/damage and seat type/performance should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

		Left	Center	Right
FIRST	Head Restraint Type/Damage	3	-	3
	Seat Type	02	-	02
	Seat Performance	1	-	1
SECOND	Head Restraint Type/Damage	1	-	1
	Seat Type	03	03	03
	Seat Performance	1	1	1
THIRD	Head Restraint Type/Damage			
	Seat Type			
	Seat Performance			
OTHER	Head Restraint Type/Damage			
	Seat Type			
	Seat Performance			

Head Restraint Type/Damage by Occupant at This Occupant Position

- (0) No head restraints
- (1) Integral – no damage
- (2) Integral – damaged during accident
- (3) Adjustable – no damage
- (4) Adjustable – damaged during accident
- (5) Add-on – no damage
- (6) Add-on – damaged during accident
- (8) Other (specify): _____
- (9) Unknown

Seat Type (This Occupant Position)

- (00) No seat
- (01) Bucket
- (02) Bucket with folding back
- (03) Bench
- (04) Bench with separate back cushions
- (05) Bench with folding back(s)
- (06) Split bench with separate back cushions
- (07) Split bench with folding back(s)
- (08) Pedestal (i.e., van type)
- (09) Other seat type (specify): _____
- (99) Unknown

Seat Performance (This Occupant Position)

- (0) No seat
- (1) No seat performance failure(s)
- (2) Seat performance failure(s)
(Encode all that apply)
 - [A] Seat adjusters failed
 - [B] Seat back folding locks failed
 - [C] Seat tracks failed
 - [D] Seat anchors failed
 - [E] Deformed by impact of passenger from rear
 - [F] Deformed by impact of passenger from front
 - [G] Deformed by own inertial forces
 - [H] Deformed by passenger compartment intrusion (specify): _____
- [I] Other (specify): _____
- (9) Unknown

DESCRIBE ANY INDICATION OF ABNORMAL OCCUPANT POSTURE (I.E. UNUSUAL OCCUPANT CONTACT PATTERN)

EJECTION/ENTRAPMENT DATA

Complete the following if the researcher has any indications that an occupant was either ejected from or entrapped in the vehicle. Code the appropriate data on the Occupant Assessment Form.

EJECTION No ☒ Yes ☐

Describe indications of ejection and body parts involved in partial ejection(s):

Occupant Number						
Ejection						
Ejection Area						
Ejection Medium						
Medium Status						

Ejection

- (1) Complete ejection
- (2) Partial ejection
- (3) Ejection, unknown degree
- (9) Unknown

Ejection Area

- (1) Windshield
- (2) Left front
- (3) Right front
- (4) Left rear
- (5) Right rear
- (6) Rear

(7) Roof

- (8) Other area (e.g., back of pickup, etc.) (specify):

- (9) Unknown

Ejection Medium

- (1) Door/hatch/tailgate
- (2) Nonfixed roof structure
- (3) Fixed glazing
- (4) Nonfixed glazing (specify):

(5) Integral structure

- (8) Other medium (specify):

- (9) Unknown

Medium Status (Immediately Prior to Impact)

- (1) Open
- (2) Closed
- (3) Integral structure
- (9) Unknown

ENTRAPMENT No ☒ Yes ☐

Describe entrapment mechanism: _____

Component(s): _____

(Note in vehicle interior diagram)

APPENDIX E

NASS Occupant Forms



OCCUPANT ASSESSMENT FORM

1. Primary Sampling Unit Number
2. Case Number - ~~Stratum~~ 90-07
3. Vehicle Number 01
4. Occupant Number 01

OCCUPANT'S CHARACTERISTICS

5. Occupant's Age 40
Code actual age at time of accident.
(00) Less than one year old (specify by month):

(97) 97 years and older
(99) Unknown
6. Occupant's Sex 1
(1) Male
(2) Female
(9) Unknown
7. Occupant's Height 71
Code actual height to the nearest inch.
(99) Unknown
8. Occupant's Weight 175
Code actual weight to the nearest pound.
(999) Unknown
9. Occupant's Role 1
(1) Driver
(2) Passenger
(9) Unknown
10. Occupant's Seat Position 11
Front Seat
(11) Left side
(12) Middle
(13) Right side
(14) Other (specify): _____
Second Seat
(21) Left side
(22) Middle
(23) Right side
(24) Other (specify): _____
Third Seat
(31) Left side
(32) Middle
(33) Right side
(34) Other (specify): _____
Fourth Seat
(41) Left side
(42) Middle
(43) Right side
(44) Other (specify): _____
(97) In or on unenclosed area
(98) Other seat (specify): _____
(99) Unknown

11. Occupant's Posture 0
(0) Normal posture
(1) Abnormal posture (specify): _____
(9) Unknown

EJECTION/ENTRAPMENT

12. Ejection 0
(0) No ejection
(1) Complete ejection
(2) Partial ejection
(3) Ejection, unknown degree
(9) Unknown
13. Ejection Area 0
(0) No ejection
(1) Windshield
(2) Left front
(3) Right front
(4) Left rear
(5) Right rear
(6) Rear
(7) Roof
(8) Other area (e.g., back of pickup, etc.)
(specify): _____
(9) Unknown
14. Ejection Medium 0
(0) No ejection
(1) Door/hatch/tailgate
(2) Nonfixed roof structure
(3) Fixed glazing
(4) Nonfixed glazing (specify): _____
(5) Integral structure
(8) Other medium (specify): _____
(9) Unknown
15. Medium Status (Immediately Prior to Impact) 0
(0) No ejection
(1) Open
(2) Closed
(3) Integral structure
(9) Unknown
16. Entrapment 0
(NOTE: Entrapped means that part of the person was in the vehicle and mechanically restrained; jammed doors and immobilizing injuries by themselves are not sufficient to constitute entrapment.)
(0) Not entrapped
(1) Entrapped
(9) Unknown

BEST AVAILABLE COPY

RESTRAINT SYSTEM AND SEAT EVALUATION**17. Manual (Active) Belt System Availability** 4

- (0) Not available
- (1) Belt removed/destroyed
- (2) Shoulder belt
- (3) Lap belt
- (4) Lap and shoulder belt
- (5) Belt available—type unknown
- (8) Other belt (specify): _____

(9) Unknown

18. Manual (Active) Belt System Use 04

- (00) None used, not available, or belt removed/destroyed
- (01) Inoperative (specify): _____

- (02) Shoulder belt
- (03) Lap belt
- (04) Lap and shoulder belt
- (05) Belt used—type unknown
- (08) Other belt used (specify): _____

- (12) Shoulder belt used with child safety seat
- (13) Lap belt used with child safety seat
- (14) Lap and shoulder belt used with child safety seat
- (15) Belt used with child safety seat—type unknown
- (18) Other belt used with child safety seat

(specify): _____

(99) Unknown if belt used

19. Proper Use of Manual (Active) Belts 1

- (0) None used or not available
- (1) Belt used properly
- (2) Belt used properly with child safety seat

Belt Used Improperly

- (3) Shoulder belt worn under arm
- (4) Shoulder belt worn behind back or seat
- (5) Belt worn around more than one person
- (6) Lap belt worn on abdomen
- (7) Lap belt or lap and shoulder belt used improperly with child safety seat (specify): _____

(8) Other improper use of manual belt system (specify): _____

(9) Unknown

20. Manual (Active) Belt Failure Modes During Accident 1

- (0) No manual belt used or not available
- (1) No manual belt failure(s)
- (2) Manual belt failure(s) (check all that apply)
- [] Torn webbing (stretched webbing not included)
- [] Broken buckle or latchplate
- [] Upper anchorage separated
- [] Other anchorage separated (specify): _____

[] Broken retractor

[] Other manual belt failure (specify): _____

(9) Unknown

21. Automatic (Passive) Restraint System Availability 1

- (0) Not equipped/not available
- (1) Airbag
- (2) Airbag disconnected (specify): _____

- (3) Airbag not reinstalled
- (4) 2 point automatic belts
- (5) 3 point automatic belts
- (6) Automatic belts destroyed or rendered inoperative
- (9) Unknown

22. Automatic (Passive) Restraint Function 4

- (0) Not equipped/not available

Automatic Belt

- (1) Automatic belt in use
- (2) Automatic belt not in use
- (3) Automatic belt use unknown

Air Bag

- (4) Airbag deployed during accident
- (5) Airbag deployed inadvertently just prior to accident
- (6) Deployed, accident sequence undetermined
- (7) Nondeployed
- (8) Unknown if deployed
- (9) Unknown

23. Did Automatic (Passive) Restraint Fail 1

- (0) Not equipped/not available
- (1) No
- (2) Yes (specify): _____

(9) Unknown

24. Police Reported Restraint Use 4

- (0) None used
- (1) Police did not indicate restraint use
- (2) Shoulder belt
- (3) Lap belt
- (4) Lap and shoulder belt
- (5) Belt used, type not specified
- (6) Child safety seat
- (7) Other or automatic restraint (specify): _____

(8) Restrained, type unknown

(9) Police indicated "unknown"

25. Head Restraint Type/Damage by Occupant at This Occupant Position 3

- (0) No head restraints
- (1) Integral—no damage
- (2) Integral—damaged during accident
- (3) Adjustable—no damage
- (4) Adjustable—damaged during accident
- (5) Add-on—no damage
- (6) Add-on—damaged during accident
- (8) Other (specify): _____

(9) Unknown

26. Seat Type (This Occupant Position) 02
- (00) Occupant not seated or no seat
 - (01) Bucket
 - (02) Bucket with folding back
 - (03) Bench
 - (04) Bench with separate back cushions
 - (05) Bench with folding back(s)
 - (06) Split bench with separate back cushions
 - (07) Split bench with folding back(s)
 - (08) Pedestal (i.e., van type)
 - (09) Other seat type (specify):

(99) Unknown

27. Seat Performance (This Occupant Position) 1
- (0) Occupant not seated or no seat
 - (1) No seat performance failure(s)
 - (2) Seat performance failure(s)
(check all that apply)
 - ☐ [] Seat adjusters failed
 - ☐ [] Seat back folding locks failed
 - ☐ [] Seat tracks failed
 - ☐ [] Seat anchors failed
 - ☐ [] Deformed by impact of passenger from rear
 - ☐ [] Deformed by impact of passenger from front
 - ☐ [] Deformed by own inertial forces
 - ☐ [] Deformed by passenger compartment intrusion (specify):

☐ [] Other (specify):

(9) Unknown

CHILD SAFETY SEAT

28. Child Safety Seat Make/Model 000
- (000) No child safety seat
 - Applicable codes are found in your NASS CDS Data Collection, Coding, and Editing Manual
 - (997) Other make/model (specify):

(998) Unknown make/model

(999) Unknown if child safety seat used

29. Type of Child Safety Seat 0
- (0) No child safety seat
 - (1) Infant seat
 - (2) Toddler seat
 - (3) Convertible seat
 - (4) Booster seat
 - (7) Other type child safety seat (specify):

(8) Unknown child safety seat type

(9) Unknown if child safety seat used

30. Child Safety Seat Orientation 00
- (00) No child safety seat
 - Designed for Rear Facing for This Age/Weight
 - (01) Rear facing
 - (02) Forward facing
 - (08) Other orientation (specify):

(09) Unknown orientation

Designed for Forward Facing for This Age/Weight

- (11) Rear facing
- (12) Forward facing
- (18) Other orientation (specify):

(19) Unknown orientation

Unknown Design or Orientation for This Age/Weight, or Unknown Age/Weight

- (21) Rear facing
- (22) Forward facing
- (28) Other orientation (specify):

(29) Unknown orientation

(99) Unknown if child safety seat used

31. Child Safety Seat Harness Usage 00

32. Child Safety Seat Shield Usage 00

33. Child Safety Seat Tether Usage 00
- Note: Options below applicable to Variables OA31-OA33.
- (00) No child safety seat

Not Designed with
Harness/Shield/Tether

- (01) After market harness/shield/tether added, not used
- (02) After market harness/shield/tether used
- (03) Child safety seat used, but no after market harness/shield/tether added
- (09) Unknown if harness/shield/tether added or used

Designed with Harness/Shield/Tether

- (11) Harness/shield/tether not used
- (12) Harness/shield/tether used
- (19) Unknown if harness/shield/tether used

Unknown If Designed with Harness/Shield/Tether

- (21) Harness/shield/tether not used
- (22) Harness/shield/tether used
- (29) Unknown if harness/shield/tether used

(99) Unknown if child safety seat used



OCCUPANT INJURY FORM

1. Primary Sampling Unit Number

3. Vehicle Number

01

2. Case Number — Stratum

90-07

4. Occupant Number

01

INJURY DATA

Record below the actual injuries sustained by this occupant that were identified from the official and unofficial data sources. Remember not to double count an injury just because it was identified from two different sources. If greater than ten injuries have been documented, encode the balance on the Occupant Injury Supplement.

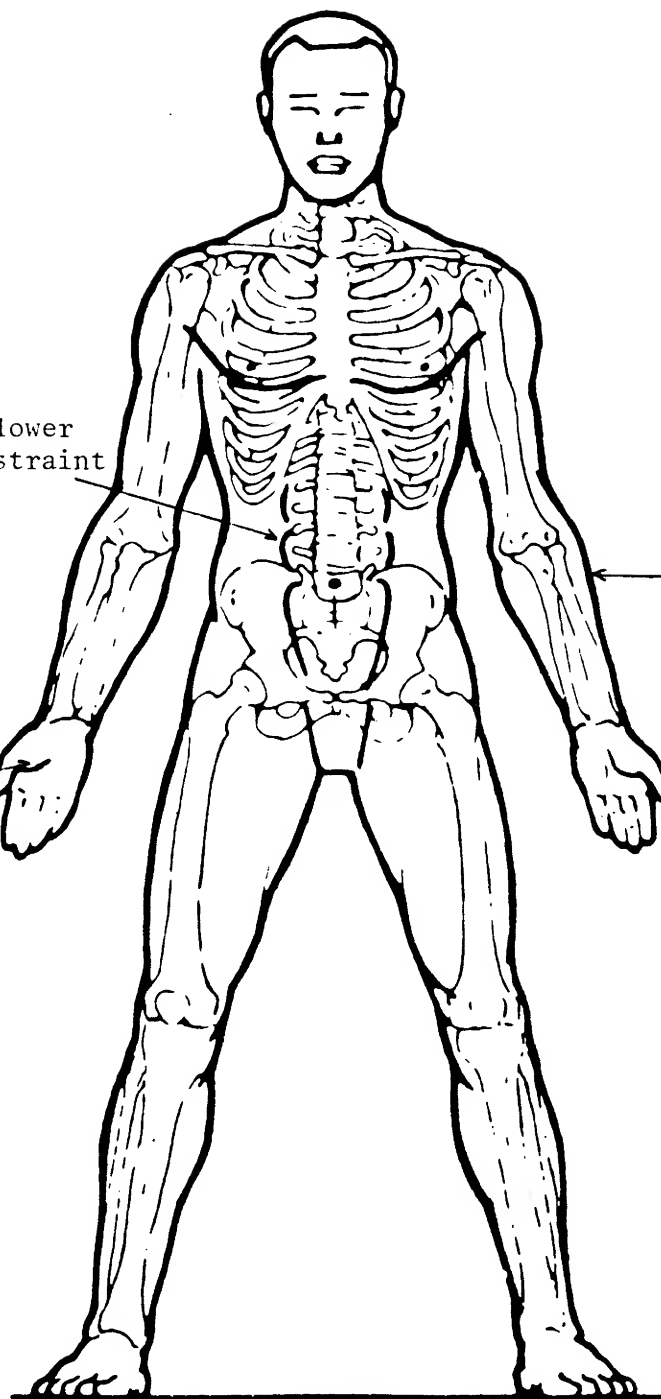
	Source of Injury Data	Body Region	O.I.C.—A.I.S.				Injury Source	Injury Source Confidence Level	Direct/ Indirect Injury	Occupant Area Intrusion No.
			Aspect	Lesion	System Organ	A.I.S. Severity				
1st	5. <u>7</u>	6. <u>W</u>	7. <u>R</u>	8. <u>S</u>	9. <u>J</u>	10. <u>1</u>	11. <u>04</u>	12. <u>1</u>	13. <u>1</u>	14. <u>00</u>
2nd	15. <u>7</u>	16. <u>R</u>	17. <u>L</u>	18. <u>C</u>	19. <u>I</u>	20. <u>1</u>	21. <u>22</u>	22. <u>2</u>	23. <u>1</u>	24. <u>00</u>
3rd	25. <u> </u>	26. <u> </u>	27. <u> </u>	28. <u> </u>	29. <u> </u>	30. <u> </u>	31. <u> </u>	32. <u> </u>	33. <u> </u>	34. <u> </u>
4th	35. <u> </u>	36. <u> </u>	37. <u> </u>	38. <u> </u>	39. <u> </u>	40. <u> </u>	41. <u> </u>	42. <u> </u>	43. <u> </u>	44. <u> </u>
5th	45. <u> </u>	46. <u> </u>	47. <u> </u>	48. <u> </u>	49. <u> </u>	50. <u> </u>	51. <u> </u>	52. <u> </u>	53. <u> </u>	54. <u> </u>
6th	55. <u> </u>	56. <u> </u>	57. <u> </u>	58. <u> </u>	59. <u> </u>	60. <u> </u>	61. <u> </u>	62. <u> </u>	63. <u> </u>	64. <u> </u>
7th	65. <u> </u>	66. <u> </u>	67. <u> </u>	68. <u> </u>	69. <u> </u>	70. <u> </u>	71. <u> </u>	72. <u> </u>	73. <u> </u>	74. <u> </u>
8th	75. <u> </u>	76. <u> </u>	77. <u> </u>	78. <u> </u>	79. <u> </u>	80. <u> </u>	81. <u> </u>	82. <u> </u>	83. <u> </u>	84. <u> </u>
9th	85. <u> </u>	86. <u> </u>	87. <u> </u>	88. <u> </u>	89. <u> </u>	90. <u> </u>	91. <u> </u>	92. <u> </u>	93. <u> </u>	94. <u> </u>
10th	95. <u> </u>	96. <u> </u>	97. <u> </u>	98. <u> </u>	99. <u> </u>	100. <u> </u>	101. <u> </u>	102. <u> </u>	103. <u> </u>	104. <u> </u>

AGE 40
SEX MALE
WT. 175 lbs.
HT. 71"

Aggravated a chronic lower
back pain (AIS-0), Restraint
loading/impact force

Sprain of the right
thumb (WRSJ-1),
Steering wheel

Contusion of the upper
third of the dorsal
aspect of the left forearm
(RLCI-1), Left upper
A-pillar



SOURCE OF INJURY DATA**OFFICIAL**

- (1) Autopsy records with or without hospital medical records
- (2) Hospital medical records other than emergency room (eg. discharge summary)
- (3) Emergency room records only (including associated X-rays or other lab reports)
- (4) Private physician, walk-in or emergency clinic

UNOFFICIAL

- (5) Lay coroner report
- (6) E.M.S. personnel
- (7) Interviewee
- (8) Other source (specify): _____
- (9) Police

INJURY SOURCE**FRONT**

- (01) Windshield
- (02) Mirror
- (03) Sunvisor
- (04) Steering wheel rim
- (05) Steering wheel hub/spoke
- (06) Steering wheel (combination of codes 04 and 05)
- (07) Steering column, transmission selector lever, other attachment
- (08) Add-on equipment (e.g., CB, tape deck, air conditioner)
- (09) Left instrument panel and below
- (10) Center instrument panel and below
- (11) Right instrument panel and below
- (12) Glove compartment door
- (13) Knee bolster
- (14) Windshield including one or more of the following: front header, A-pillar, instrument panel, mirror, or steering assembly (driver side only)
- (15) Windshield including one or more of the following: front header, A-pillar, instrument panel, or mirror (passenger side only)
- (16) Other front object (specify): _____

LEFT SIDE

- (20) Left side interior surface, excluding hardware or armrests
- (21) Left side hardware or armrest
- (22) Left A pillar
- (23) Left B pillar
- (24) Other left pillar (specify): _____
- (25) Left side window glass or frame

- (26) Left side window glass including one or more of the following: frame, window sill, A-pillar, B-pillar, or roof side rail
- (27) Other left side object (specify): _____

RIGHT SIDE

- (30) Right side interior surface, excluding hardware or armrests
- (31) Right side hardware or armrest
- (32) Right A pillar
- (33) Right B pillar
- (34) Other right pillar (specify): _____
- (35) Right side window glass or frame
- (36) Right side window glass including one or more of the following: frame, window sill, A-pillar, B-pillar, roof side rail
- (37) Other right side object (specify): _____

INTERIOR

- (40) Seat, back support
- (41) Belt restraint webbing/buckle
- (42) Belt restraint B-pillar attachment point
- (43) Other restraint system component (specify): _____

- (44) Head restraint system
- (45) Air bag
- (46) Other occupants (specify): _____

- (47) Interior loose objects
- (48) Child safety seat (specify): _____

- (49) Other interior object (specify): _____

ROOF

- (50) Front header
- (51) Rear header
- (52) Roof left side rail
- (53) Roof right side rail
- (54) Roof or convertible top

FLOOR

- (56) Floor including toe pan
- (57) Floor or console mounted transmission lever, including console
- (58) Parking brake handle
- (59) Foot controls including parking brake

REAR

- (60) Backlight (rear window)
- (61) Backlight storage rack, door, etc.
- (62) Other rear object (specify): _____

EXTERIOR OF OCCUPANT'S VEHICLE

- (65) Hood
- (66) Outside hardware (e.g., outside mirror, antenna)
- (67) Other exterior surface or tires (specify): _____

- (68) Unknown exterior objects

EXTERIOR OF OTHER MOTOR VEHICLE

- (70) Front bumper
- (71) Hood edge
- (72) Other front of vehicle (specify): _____

- (73) Hood
- (74) Hood ornament
- (75) Windshield, roof rail, A-pillar
- (76) Side surface
- (77) Side mirrors
- (78) Other side protrusions (specify): _____

- (79) Rear surface
- (80) Undercarriage
- (81) Tires and wheels
- (82) Other exterior of other motor vehicle (specify): _____

- (83) Unknown exterior of other motor vehicle

OTHER VEHICLE OR OBJECT IN THE ENVIRONMENT

- (84) Ground
- (85) Other vehicle or object (specify): _____

- (86) Unknown vehicle or object

NONCONTACT INJURY

- (90) Fire in vehicle
- (91) Flying glass
- (92) Other noncontact injury source (specify): _____

- (97) Injured, unknown source

INJURY SOURCE CONFIDENCE LEVEL

- (1) Certain
- (2) Probable
- (3) Possible
- (9) Unknown

DIRECT/INDIRECT INJURY

- (1) Direct contact injury
- (2) Indirect contact injury
- (3) Noncontact injury
- (7) Injured, unknown source

OCCUPANT INJURY CLASSIFICATION**O.I.C. Body Region**

- (M) Abdomen
- (Q) Ankle-foot
- (A) Arm (upper)
- (B) Back-thoracolumbar spine
- (C) Chest
- (E) Elbow
- (F) Face
- (R) Forearm
- (H) Head-skull
- (U) Injured, unknown region
- (K) Knee
- (L) Leg (lower)
- (Y) Lower limb(s) (whole or unknown part)
- (N) Neck-cervical spine
- (P) Pelvic-hip
- (S) Shoulder
- (T) Thigh
- (X) Upper limb(s) (whole or unknown part)
- (O) Whole body

- (W) Wrist-hand

Aspect of Injury

- (A) Anterior-front
- (B) Bilateral (rib fracture only)
- (C) Central
- (I) Inferior-lower
- (U) Injured, unknown aspect
- (L) Left
- (P) Posterior-back
- (R) Right
- (S) Superior-upper
- (W) Whole region

Lesion

- (A) Abrasion
- (M) Amputation
- (V) Avulsion
- (B) Burn
- (K) Concussion
- (C) Contusion
- (N) Crush

- (G) Detachment, separation
- (D) Dislocation
- (F) Fracture
- (Z) Fracture and dislocation
- (U) Injured, unknown lesion
- (L) Laceration
- (O) Other
- (P) Perforation, puncture
- (R) Rupture
- (S) Sprain
- (T) Strain
- (E) Total severance, transection

System/Organ

- (W) All systems in region
- (A) Arteries-veins
- (B) Brain
- (D) Digestive
- (E) Ears
- (O) Eye
- (H) Heart
- (U) Injured, unknown system

- (I) Integumentary
- (J) Joints
- (K) Kidneys
- (L) Liver
- (M) Muscles
- (N) Nervous system
- (P) Pulmonary-lungs
- (R) Respiratory
- (S) Skeletal
- (C) Spinal cord
- (Q) Spleen
- (T) Thyroid, other endocrine gland
- (G) Urogenital
- (V) Vertebrae

Abbreviated Injury Scale

- (1) Minor injury
- (2) Moderate injury
- (3) Serious injury
- (4) Severe injury
- (5) Critical injury
- (6) Maximum (untreatable)
- (7) Injured, unknown severity